ORGANIZATIONAL BEHAVIOUR IN HEALTHCARE

Shaping High Quality, Affordable and Equitable Healthcare

Meaningful Innovation and System Transformation

Edited by
Nicola Burgess
Graeme Currie

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Organizational Behaviour in Healthcare

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CHAPTER 1

Introduction: Shaping High Quality, Affordable and Equitable Healthcare Through Meaningful Innovation and System Transformation

Nicola Burgess, Graeme Currie, and Andy Hardy

Our edited book has three interlinked aims. First, its prime aim is to support the development of a healthcare system that can sustain in the face of increasing demands and limited resource. Second, to provide

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cutting-edge thought leadership regarding theoretical issues derived from a broad array of research carried out by Warwick Business School and associated researchers, relevant to sustaining healthcare delivery in the face of increasing demands and limited resource. The case for evidence-based management is well made; we need to accompany this with more evidence-based approaches to management and research carried out at Warwick Business School that is presented here hopefully aids such an endeavour. Third, we seek to ensure our theoretical analysis informs practical lessons for those seeking to sustain healthcare delivery in the face of increasing demands and limited resource. To this end, the question that drives our contributions towards thought leadership and practice around sustaining high quality, affordable and equitable healthcare in this edited book is:

> What does our research tell us about how policymakers, managers, professionals, and service users, can sustain high quality, affordable and equitable healthcare through meaningful innovation and system transformation?

Readers might take note of our use of 'meaningful' in the question above. This reflects our intention to move from 'what we (as academics) know' in terms of evidence about organizing and managing healthcare delivery to 'what we (as practitioners) do' in organizing and managing healthcare delivery. In essence, our edited book is directed towards managing a translation gap, not in that of clinical evidence into practice (Cooksey, 2006), but organization and management evidence into practice that a Chief Executive would regard as useful on the ground.

Our inclusion of the Chief Executive of our local university hospital, University Hospitals Coventry and Warwickshire, Andy Hardy, in the co-authorship of this introductory chapter, reflects such an aim. Similarly, we include a chapter from Helen Bevan, one of the most experienced practitioners of change and improvement in health and care globally, who reflects on every chapter and pulls out a selection of actionable themes for practitioners everywhere.

Shaping High Quality, Affordable and Equitable Healthcare

As a starting point, let us define what we mean by shaping high quality, affordable and equitable healthcare. We recognize financial sustainability is crucial, given the increasing proportion of their Gross Domestic Product that nations contribute towards maintaining and developing their healthcare system, but seek to extend our concern beyond this towards a moral, as well as financial, imperative. Ensuring we can sustain, if not enhance current delivery of healthcare embodies a grand challenge for society: how to deliver the highest possible quality healthcare in the face of increasing demand and decreasing resources, and with the possibility that healthcare inequalities are getting worse, not better. Following which, we assert sustaining healthcare delivery is not merely about its efficiency and affordability, but that it is timely, accessible, equitable and high quality to enable all people to live well, age well, and die well.

Rather than engaging in policy debates about the desirability of insurance or tax-based systems for example, the thrust of our edited book to delivering healthcare that can sustain its quality and its scale in the face of increasing demand and limited resource is one framed by our expertise located in and around the interests of business school research, that about the organization and management of healthcare delivery. In doing so, we address a wide range of matters, considering institutional level, organizational level and service user level interventions. In particular, we recognize healthcare systems and organizations are peopled, encompassing professionals, managers and service users, so sustainable healthcare delivery relies upon all their efforts. The content of this edited book reflects this, emphasizing that values and culture are important, highlighting the importance of shaping behaviours of not just those delivering care, but those in receipt of care. And, even though our contributors are mainly drawn from a business school, as a set of authors that engage in critical scholarship, we hold management up to the light. Our contention is that healthcare is under-managed, albeit this does not necessarily entail we need more general managers. Rather clinicians need to be drawn more into managing healthcare delivery at an organizational and system level. Finally, we recognize most of our chapters are derived from the UK NHS experience, but suggest our parochial focus nevertheless represents an exemplar for other national systems that remain largely tax-funded. In summary, we hope our edited book is of interest to all stakeholders with a stake in sustaining high quality and affordable healthcare delivery for all, since only by coming together can we successfully pursue our aim. Let us now provide more detail about how we might go about sustaining high quality and affordable healthcare and then set out the shape of our edited book.

The Challenge of Shaping High Quality, Affordable Healthcare for All

Extraordinary advances in medicine have meant that people all over the world are living longer. According to United Nations, the world's population is expected to increase by one billion people by 2025 and by 2050, 1 in 6 people in the world will be over the age of 65 (up from 1 in 11 in 2019). Further, increases in life expectancy are no longer the preserve of high-income countries, middle- and low-income countries are also experiencing a sudden and rapid rise in their ageing population. By 2050, for example, 80% of older people (aged over 60 years) will be living in low- and middle-income countries (World Health Organization, 2018).

If living longer is one side of the equation, living well is the other. An increasingly older population is associated with an increasing number of individuals with one or more long-term (chronic) conditions (LTCs), representing what many refer to as 'a changing burden of disease'. As many as one in three adults globally suffers from multiple LTCs (Marengoni et al., 2011); the greatest prevalence of patients needing long-term care is in high-income countries where three out of four older adults suffer from multiple long-term conditions (Kingston et al., 2018). The prevalence of long-term conditions in middle- to low-income nations is also expected to rise dramatically in the coming years (World Health Organization, 2018). Our edited book relies upon studies located in high-income nations; nevertheless, we hope there are lessons to be gleaned for those in low- and medium-income nations as well.

Our more general readers, beyond those directly managing or delivering healthcare, may well have family members with such conditions through whom they can relate our aim for sustaining healthcare delivery that is inclusive of the need for older people to live well. It is a matter that affects us all. In our introduction, we present the scale and urgency of shaping sustainable healthcare as a moral and financial imperative.

A Moral Imperative

The impact of LTCs upon the individual is significant. LTCs can lead to premature mortality, a low quality of life, decreased workforce participation, productivity and financial stress. Individuals living with LTCs often have complex needs that require more holistic interventions than most health systems are designed to cater for. Subsequently, complex needs associated with multiple LTCs result in fragmented, inefficient and poor care quality for patients and their families. In a world where modern advances in medicine and medical knowledge can alleviate suffering, health systems that deny, restrict or delay access to appropriate care are widely considered unacceptable (McKee, 2018).

Therefore, health systems globally must respond to a 'changing burden of disease' and transition from a care system designed to treat episodic and acute disease, to one that coordinates and connects with a network of providers including hospital and community-based care delivery organizations, voluntary partners and charities. Providing a more holistic, coordinated approach to care delivery can potentially mitigate some of the negative impacts of LTCs, helping the world's population not just to live longer, but to live well, age well and when the time comes, to die well (Eaton et al., 2015). In some nations, this means building a system from almost nothing. In others, it means rethinking long-term care: from a basic safety net for the most vulnerable, towards a broader system that maximizes older people's functional ability and upholds their autonomy and dignity (World Health Organization, 2017).

In sum, the co-ordination of patient-centred care interventions from multiple specialist teams and providers must become the over-arching guiding principle of sustaining global health systems around the world in the face of increasing demand and limited resources.

A Financial Imperative

The proportion of a country's Gross Domestic Product (GDP) spent on healthcare varies greatly. The United States spends by far the most on healthcare, equivalent to 16.9% of its GDP; the second highest spender is Switzerland, spending 12.2%. Germany, France and Italy spend around 11% of GDP while other high-income countries, including the UK, Australia, New Zealand, Chile and Korea, spend between 8 and 10% (OECD, 2019).

Overall, healthcare spending is highest in developed countries, with increased spending generally associated with better outcomes. The United States, however, is a notable exception to this rule having some of the poorest outcomes for life expectancy and early mortality. McKee (2018) cites 'massive transaction costs' associated with the US system arising from complex administrative and regulatory processes alongside a failure to treat people at an early stage of disease, leading to higher costs of care overall.

While demand for healthcare services has consistently risen year on year, the changing burden of disease outlined above correlates to an increasing proportion of healthcare spending associated with managing LTCs. As an illustration, the high cost of treating individuals with LTCs is set out in England's *NHS Five Year Forward View* (2014). This strategy document identifies approximately 15 million people in England living with at least one LTC, accounting for 50% of primary care appointments, 70% of all acute care bed days and 70% of the healthcare budget.

To summarize, the moral imperative for sustaining high quality and equitable healthcare is correspondingly supported by a strong financial imperative as governments come under pressure to focus on efficiency and contain rising costs in the face of rising demand and depleting resources.

Rethinking Healthcare Service Delivery

For many countries, shaping and sustaining high quality, affordable and equitable healthcare requires a radical rethink about how we deliver health services that enable our ageing population to live well, and it is to this endeavour that we must urgently attend. We see the 'answer' as located at three analytical levels. First, we need to consider the institutional and environmental level within which we can shape and sustain high quality, affordable and equitable healthcare. This encompasses consideration of policy imperatives and their effect, and also the effect of professional organization and associated professional socialization that shape frontline clinicians' practices. Second, even if policy is orientated towards sustaining high quality, affordable and equitable healthcare, then we need to ensure that any gap in policy implementation is bridged through appropriate organizational level interventions. A classic intervention to ensure policy aspirations is realized for evidence-based intervention towards sustaining high quality, affordable and equitable healthcare is that of leadership distributed throughout the organization. More of this later.

Across the edited book, the importance of strategic or managerial practices to realize change is emphasized, reflecting the practice-based approach to organizational and institutional change as a strong feature of healthcare research at Warwick Business School. The better use of evidence and data is articulated in the final part of our edited book, including judicious use of patient experience of healthcare delivery. The common refrain that 'we are all in this together' heard throughout the COVID-19 pandemic reflects the need for service users to co-produce sustainable healthcare delivery. Our edited book examines the challenges and solutions to sustaining high quality, affordable and equitable healthcare delivery aligned to three dimensions of analysis: institutional level analysis, organizational level analysis and evidence-informed frontline service delivery analysis.

At the institutional level, those that study public policy highlight, first, that its constituent components can sit inconsistently alongside each other; for example, inter-organizational collaboration for healthcare delivery is encouraged (the 'network' imperative popular in contemporary policy solutions), but at the same time it may be stymied by simultaneous policy emphasis upon competition (the 'market' policy imperative) and performance (the 'hierarchical top-down' imperative to ensure accountability for resourcing) (Currie & Suhomlinova, 2006).

Second, the dynamics of professional organization represents a significant influence upon prospects for innovation. Much innovation to sustain high quality, affordable and equitable healthcare is service or process innovation, which encompasses workforce reconfiguration and new ways of working for frontline clinicians (Currie & Spyridonidis, 2019). To ensure clinicians at the frontline are agents of change and innovation, we need to understand how they are organized and socialized. For example, their jurisdictional expertise and associated demand for autonomy in serving patient needs, requires those seeking to encourage innovation to tread carefully in aligning prospective change with professional practice (Waring & Currie, 2009).

At the organizational level, we suggest healthcare providers and commissioners are 'under-managed' with respect to the change required to sustain high quality, affordable and equitable healthcare. While politicians in the UK have attacked 'managers' in the NHS as 'men [sic] in grey suits' that don't add value to care delivery, our limited resource needs to be more effectively managed, and the NHS has a low proportion of general managers (around 3% of staffing in any hospital) compared to other national healthcare systems, and indeed compared to private sector enterprises in the knowledge-intensive industries (Nuffield Trust, 2015). This argument extends to under-management beyond healthcare, since integrated interventions, notably across health and social care, help sustain high quality, affordable and equitable healthcare delivery; critics might argue against increase in the number of (general) managers, nevertheless health and social care systems need more effective management to ensure we can sustain high quality, affordable and equitable delivery.

'Leadership' commonly presents itself as a glib panacea, but the attributes of effective leadership require delineation; it is a process as much as a person (Currie & Spyridonidis, 2019). Panaceas for organizational change almost always highlight the requirement for leadership commitment from the top of the organization. It is clear that top-level managers face competing priorities in developing their strategy for a healthcare system that sustains high quality, affordable and equitable delivery, as the policy imperatives highlighted above shift. At the same time, we need to consider how leadership from the middle and at the frontline of the organization is crucial to realizing high quality, affordable and equitable healthcare delivery (Currie & Procter, 2005). We also need to recognize that at the same time leadership is distributed across the organization vertically, it is also rendered more effective where it is diverse and inclusive (Mousa et al., 2021). In such a way, we have a critical mass, an 'army' of leadership actors engaged and championing necessary innovation (Currie & Spyridonidis, 2019).

Leadership obviously requires contextualizing, and for those readers researching or working in healthcare systems in low- and middle-income countries for example, we note the influence of cultural and socio-economic influences upon the import of models of organization and management from OECD nations (Vaitheswaran et al., 2021). Rather than copy and paste prescription, those implementing innovation in healthcare need to allow adaptions where necessary (Greenhalgh & Papoutsi, 2019). As leadership is distributed across the healthcare system, strategic and managerial actors need to reflect upon their strategies and tactics (practices) for sustaining high quality, affordable and equitable healthcare (Vaara & Whittington, 2012). Realizing strategic change needs to go beyond top-down planning; it needs to extend towards inclusion of the middle and frontline of the organization, within whose ranks change actors need to tread carefully as they potentially intrude upon powerful clinicians' jurisdiction.

At the final level of analysis, evidence-informed frontline service delivery, we need to attend to user-centeredness so that healthcare sustains quality, affordability and equity. This is a consideration at population, as well as individual service user, levels. With respect to the former, given limited resource, we need to target public expenditure to ensure priorities are met and that particularly vulnerable or costly segments of the population are targeted. 'Business intelligence' is crucial, with a need for sophisticated data analysis to ensure resource is targeted with best effect; hence a need for data science capability. At the same time, we suggest 'data' is multi-faceted, not just cost or clinical evidence, but 'data' that captures clinicians' tacit knowledge about service delivery and their patient population (Dopson & Fitzgerald, 2005), and crucially 'data' about user experience of care delivery.

Cost can also be reduced, and alongside this, patient experience enhanced, where we encourage self-management of conditions when appropriate. How do we shape patient and carer behaviours towards such self-management? Digital innovation is increasingly prevalent, even more during the COVID-19 pandemic (Budd et al., 2020), and usefully contributes towards self-management from patient and carers of long-term conditions. To engage service users in change that aims to sustain quality and equity in the face of resource constraint, it needs to chime with their values, more so with marginalized populations that may be slow to access care (Goodman et al., 2017). Behavioural science expertise at Warwick Business School has made a strong contribution towards understanding and shaping consumer behaviour across many domains, including healthcare delivery, through, for example, nudge-type intervention (Vlaev et al., 2016).

The organization of our edited book follows from the above, with each of our contributing chapters orientated towards the issues raised above.

An Examination at the Institutional and Environmental Level

In the first part of our edited book, we begin with an institutional or environmental level of analysis to provide insight into how we might sustain high quality, affordable and equitable healthcare systems. We begin the first part with discussion and analysis of integrated care systems. This global trend has accelerated in recent years as publicly funded health systems are being forced to deliver more with less, without compromising quality or safety. Calls for integrating care are gaining global traction since millions of service users experience poor standards of care when input is required from diverse health professionals, working within diverse settings, across multiple locations. From the perspective of service users, carers and their families, poor synchronization between these settings contributes to lengthy delays to access, a poor patient experience, poor patient outcomes and a service that is more expensive to deliver than it needs to be. In England, the transition to integrated care systems could also reduce the volume of patients attending hospital emergency departments for illnesses that are best treated by specialists operating outside a hospital context (Johnson et al., 2020).

Since most healthcare systems are not currently set up to deliver care in an integrated way, Chapter 2 offers valuable insight into Canada's decades of experience integrating care across diverse geographical and political systems. Reay's chapter describes four approaches to integration and discusses the pros and cons of each approach. Drawing upon organizational theory, Reay highlights four factors that shape the efficacy of integrated service provision, from relational factors such as leadership and authority, professional identity and inter-professional dynamics, through to pragmatic issues of inter-organizational communication processes and geographical issues of organizational place and space.

Staying on the topic of collaboration, Burgess argues for a more relational approach to regulation. Chapter 3 presents a novel analysis of a partnership between a system regulator and five hospital chief executives. The partnership was designed to foster knowledge exchange between the five chief executives and members of their regulator concerning the enablers and challenges of leading improvement in the English NHS. The goal was to derive a set of lessons for NHS system leaders about how to foster a culture of improvement across the wider healthcare system. Underpinning the partnership was a compact which makes explicit the relational behaviours the new 'partners' agreed to adhere to. Adopting an ethnographic and processual approach to data collection and analysis, Burgess highlights the importance of embedding the compact within organizational routines that formally trigger conscious appraisal of the agreed goals and promises on a regular basis. Routine reflection ensures goal alignment and attainment over the long term and enables trust to emerge among partners. Notably, when things go wrong (as they do), the formal compact became a mechanism to surface that error, discuss what went wrong and why, and subsequently reaffirm the partnership's commitment to the shared purpose. Noting the limitation of this study as a unique and small-scale partnership, Burgess draws optimism that a more relational ‘partnership’ approach to regulation for improvement is both possible and desirable.

From policymakers learning from hospital leaders in Chapter 3, Chapter 4 looks at the barriers of adopting evidence-based practice (EBP) guidelines into practice. Presenting findings from a micro-level analysis of evidence use by orthopaedic surgeons, Grove reveals practice is shaped by a hierarchy of evidence, with professional norms situated at the top of the hierarchy. Delving deeper into the impact of such cultural dynamics upon implementing EBP, Grove concludes the evidence-to-practice gap persists because it fails to align with contextually dependant micro-clinical cultures. Grove argues closing the evidence-to-practice gap requires mechanisms that permit an internalization of EBP into micro-clinical cultures so that they become useful in the context of practice, for sustainable healthcare delivery. Encouragement to move away from formal evidence is also a central argument in a later chapter within our edited book by Nicolini and colleagues, who emphasize the processual and negotiated nature of evidence construction that will prove acceptable to the wide range of stakeholders necessary to sustain high quality, affordable and equitable healthcare.

In the concluding chapter of Part I, consistent with our pluralist view of evidence, we examine knowledge gleaned through patient and public involvement and engagement (PPIE). In Chapter 5, Croft and colleagues identify PPIE as an important (but under-utilized) knowledge generating mechanism that has potential to disrupt normative forms of decision-making described in other chapters. Highlighting the value of contextual knowledge that patients and their carers bring to inform decision-making about health service delivery, alongside the unique overview of the patient experience and efficacy of the ‘joins’ in healthcare systems, Croft et al. propose a ‘democratic imperative’ for more strategic involvement of patients and carers in decisions about service provision. Research has shown PPIE knowledge acquired through formalized systems often fails to be integrated into service development; instead, PPIE forums tend to be seen as an opportunity for knowledge dissemination, rather than knowledge acquisition. However, drawing on the concept of absorptive capacity, Croft et al. illuminate the role of socialization factors that create organizational conditions for incorporating PPIE into strategic decision-making. Acknowledging some limiting factors of PPIE, the authors emphasize the importance of diversity and representativeness across all those engaged in decision-making processes, meaning that socialization processes need to promote and actively seek out involvement from representatives across society.

In the second part of our edited book, we more specifically focus upon an organizational level of analysis to provide insight into how we might sustain high quality, affordable and equitable healthcare systems. Chapters in this part cover core organizational issues, such as distribution of leadership across the workforce, strategic management (particularly practices enacted by middle managers), financial management, multi-disciplinary teamworking to ensure co-ordination of care, and how healthcare organizations might be proactive in addressing the many crises with which they are faced.

Leadership is commonly seen as a panacea for any ills of healthcare delivery; correspondingly, we include a chapter by Croft and Dawson on distributed leadership with a particular eye on ensuring more diversity. Of course, this has a normative, more moral rationale, but only in part. There are good business reasons for ensuring diverse leadership. First, we might better reflect the make-up of our population and the patients we serve. Second, in the face of workforce shortages at all levels, we should be concerned about missing out on a potential source of leadership from women or under-represented groups in the workforce, whom help sustain high quality, affordable and equitable healthcare delivery. Commonly, this is viewed as a ‘glass ceiling’ challenge. Croft and Dawson reverse this metaphor and characterize the challenge as one of ‘sticky floor’. Rather than ‘fixing the person’ through enhancing their ability to enact leadership, Croft and Dawson argue we must fix the organization and system, so that motivation and opportunity for under-represented groups in leadership position are enhanced.

Continuing our pre-occupation with leadership, we also see contemporary discourse that emphasizes the importance of strategy and leadership to support its enactment. Traditionally, this is viewed as planning activity undertaken by the upper echelons of organizations. More recently, process and practice-based views of strategy have been ascendant (Vaara & Whittington, 2012), within which the role of middle managers in supporting strategic change has been highlighted, including within healthcare organizations (Currie & Procter, 2005). Woolley and Currie draw upon the practice-based view of strategy to illuminate ‘how’ top managers need to share leadership and elicit a middle manager contribution to strategic change in a hospital. Given the challenges of the professional context within which change is realized, then hybrid managers (those that combine clinical and managerial perspectives) are highlighted as an important resource. Woolley and Currie advocate for strategic practices focused upon ‘context setting’ and ‘boundary work’ to realize a contribution from hybrid middle managers towards change. They draw upon two detailed illustrations to make their argument, focused upon clinical efficiency and cost control. Their call is one that views strategy as emergent and co-produced across the ranks of top managers and middle managers if strategic change towards a sustainable healthcare system is to be realized. Implicit within which, they provide a warning about the limits of traditional top-down approaches to strategy, within which strategy planning and its implementation are seen as a linear progression.

Radaelli continues with a focus upon strategic practices, but focused upon managers nearer the frontline of care delivery, with particular concern for their role in improving care delivery across multiple professional teams and departments within a hospital. Indeed, he highlights the important role that ‘general’ (without a clinical background) managers play in constituting multi-disciplinary care. Focusing upon empirical cases within which managers are mandated to engage clinicians in a drive for service improvement, Radaelli reveals how they do this. First managers appropriate the work regarded as low level by clinicians to ease the contribution of the latter towards change (Huising, 2015). Second, they share their specialist functional knowledge (e.g. operations management or human resource management) with clinicians in co-producing service improvement. Third, they tactically use their peripheral and technical status in the organization to mediate micro-conflicts between clinical groups. His research study provides a useful contribution towards relational understanding of how to realize change (Kellogg, 2019) that is likely to prove useful to practitioners.

Kerridge and colleagues also argue that, for innovation to deliver sustainable transformation of healthcare systems, leadership is a critical ingredient. Yet how individual and collective leadership blends with national policy and front-line practice to produce innovation is not well understood. They highlight that, while a ‘thousand flowers bloom’ at a local level, few innovations scale up nationally. They pose the question ‘how might leadership for (scaled up) innovation be strengthened?’ and accordingly, make recommendations in pursuit of such an aim. They emphasize collective leadership needs to flourish beyond individual organizations across networks and larger systems. They argue, to support such collective leadership, resources require distribution away from national agencies where competition is fierce and limiting, to regional and local agencies, across whom collaboration is more likely to flourish (Fairman, 2013).

And of course, within our organizational level of analysis, while emphasizing quality and equity considerations, we cannot ignore the fact that financial considerations dominate policy discourse regarding investment in healthcare systems. Following which, healthcare managers and professionals need to justify any resource investment and put performance management systems in place to monitor financial, as well as quality of care, outcomes. Such a point is forcefully made in the chapter presented by Crump, but within which the challenge of developing effective measures of financial performance is revealed. Crump sets out how such a challenge might be addressed, indeed if it can be. Crump may not set out a 'full' answer, but does offer an exemplar for financial measurement provided to evaluate the outcomes of large-scale transformation within an NHS hospital that others may learn from in pursuit of high quality and equitable healthcare.

Finally, given the onset of COVID-19 pandemic, it would seem odd if we didn't encompass discussion of how healthcare systems might sustain high quality, affordable and equitable care delivery in the face of challenges that emerged, e.g. dealing with associated bed and workforce pressures, improvising care and innovating on the front-line, ensuring return to mainstream care as pressures subsided. The chapter by Dawson and colleagues highlights how routines and practices derived from a systematic value-based quality improvement intervention (in this case, 'lean') implemented pre-pandemic, facilitated an effective, real-time response towards innovation for care delivery in hospitals in England. Given pressures upon the healthcare system from crises are likely to increase over time, extending beyond 'winter flu' hospital admissions, hospitals in particular (but also encompassing other parts of the health and social care system) might want to attend to how they implement and scale up lean and other continuous improvement interventions in preparation.

In Part III of our edited book, we return to the complex, situated and context-laden issue of evidence use for decision-making discussed in part one. Nicolini and colleagues share insights from a processual study of decision-making processes within Clinical Commissioning Groups

(CCGs), the entities, until July 2022 (when they were replaced by Integrated Care Boards), that were responsible for making decisions about planning and resourcing healthcare provision. Like Grove in the first part of our edited book, Nicolini and colleagues lament the fallacy of treating evidence as an entity in itself; instead, they argue evidence is constituted via an observable negotiated process of 'evidencing', where evidential value is assigned in ways that encompass practical, moral and political judgements (not just scientific evidence) to inform the decision-making process. As argued in earlier chapters of our edited book, such a pluralist conception and use of evidence inform the realization of high quality, affordable and equitable healthcare delivery.

From decisions about funding allocation by CCGs for sustaining high quality, affordable and equitable healthcare, we turn our attention to the role of the consumer and specifically the decisions people make that ultimately shapes consumption of health-related services. Adopting insights from behavioural science, Ding, Makki and Vlaev assert human behaviours and decisions are often sub-optimal, placing immense cost pressure upon health systems that could potentially be avoided. Using case studies of the application of behavioural insights to the treatment of diabetes, cardiovascular diseases, and cancer in each of the three stages of the 'behaviour change pathway', Ding and colleagues show how advances in behavioural science can support patient and carer self-management in ways that foster better health outcomes while reducing the cost of service delivery.

With respect to diffusing innovation into practice, Bharatan and colleagues argue we should pay attention to processes of value alignment and the mechanisms that underpin it. This seems more significant given recent policy moves in the English NHS and other nations such as Canada (as noted by Reay in Chapter 2), towards more integrated care across health and social care. And even more significant with client populations that are hard to engage with any service offering, such as the homeless population that Bharatan and colleagues focus upon. They highlight several studies that have shown healthcare innovations are more readily adopted when they are compatible with an adopter's values, norms and desired outcomes. Since values and norms are inherently socially and politically invested, any shift would take considerable time and effort. In line with other chapters' focus upon managerial practices, Bharatan et al. shed light on the mechanisms through which values alignment can be accomplished to sustain innovation processes and from which high quality, affordable and equitable healthcare derives.

Concluding Part III, Han and colleagues examine the role of big data science in delivering important insights for sustaining high quality, affordable and equitable healthcare. Han, Yaraghi and Gopal demonstrate the role big data science can play in unveiling a vast range of hidden problems and solutions, from revealing unnecessary variation in the cost of medical treatment, to predicting outbreaks of epidemics, and more generally to improving the overall quality of care delivery. In this chapter, to empirically evidence their argument, Han and colleagues use big data to examine the impact of star ratings upon financial success (i.e. profit) of care homes in the United States and how this correlation induces 'rating inflation' among care homes. Using big data scientific methods, Han and colleagues reveal between 6 and 8% of care homes engage in 'dishonest' reporting. They thus provide a timely warning about the challenge posed through performance management systems and a reminder of the dangers posed by the 'gaming' of such systems (a topic also reflected upon by Burgess in Chapter 3).

A Chief Executive's Perspective

The chapters in this book support the call for health and social care professionals to be enabled to work seamlessly together in partnership to address the challenges of a health and social care system in crisis. The phrase 'clinically led, managerially enabled' seems important. Too often I've seen clinical professionals (and healthcare leaders) become distracted and disabled by policies and infrastructure that do not befit a patient-centred healthcare system. Fragmented IT systems, inefficient processes, siloed working, punitive regulatory processes and conflicting political priorities all add up to a badly run, inefficient and costly system that fails the patient, fails the public and fails the people that work tirelessly to deliver the highest possible quality of care. With this in mind, there is much to learn from research presented in this book to help us transition towards a health and care system that is joined-up, integrated and patient-centred.

As one of the chief executives involved in the partnership described briefly in Chapter 2, I can't emphasize enough the value of institutions working together towards a shared purpose and the role of managerial practices (in this case, a leadership compact) to guide and sustain new ways of working even through challenging times, holding us each to account in a manner that fostered deep and lasting inter-organizational learning for improvement (for more detailed information about the partnership see the evaluation report by Burgess et al. [2022]).

One striking and enduring theme of this edited book is the contested nature of evidence. Evidence takes many shapes and forms; failure to recognize the normative processes that privilege certain types of information above others can lead to decisions about resourcing and patient care that might not represent 'best practice' in context. Similarly, failing to capture tacit forms of knowledge such as that of diverse specialists alongside the unique knowledge resource service users can also lead to avoidable blunders of service design, resource allocation and a service that costs more yet delivers less than it should. Croft et al. make a powerful case for elevating the perceived status of patient and public involvement and engagement (PPIE) from one of 'lay expertise' to one that is representative of a unique and valuable resource that offers the potential to disrupt normative thinking and decision-making, and shape patient-centred service design and delivery in a meaningful way. In other words, a more strategic inclusion of PPIE into decision-making processes can help ensure constrained resources are used in ways that deliver the highest possible value to our patients.

When it comes to sustaining high quality, affordable and equitable healthcare, inclusivity represents a pervasive theme. At an organizational level, inclusive leadership means proactively engaging middle managers and frontline managers in strategic change. Moreover, inclusive leadership must embrace diversity, for which as Chapter 5 illustrates, there is much that remains to be done. The 'sticky floor' metaphor is powerful; all healthcare leaders and managers have a duty to support under-represented employees to reach their full potential. Nobody should ever be overlooked for issues of race, gender or disability, quite simply we as leaders must do more at an organizational and institutional level to enhance diversity and inclusion among our leadership teams.

In the English NHS, system leaders are being encouraged to adopt a systematic and embedded approach to improvement and innovation across their organizations, requiring investments and changes to leadership infrastructure and training. This challenge is made harder at a time when an under-resourced system is struggling to bounce back from the pandemic, its workforce suffering the long-term effects of burnout. Since 2015 my own organization has adopted a systematic approach to building improvement capability across the whole organization and to embed a culture of continuous improvement. During this time, I have come to believe quality improvement isn't a luxury, or a 'bolt-on' to everything else we must deliver; instead, I have learned 'improvement' is everyones' job, every day. As a leader this transition has required changes to my own leadership style, recognizing that the people who do the work are the ones who know best how to improve the work. This means healthcare leaders must seek to frame problems for others to solve and to encourage and enable employees to solve problems and lead improvement as part of their daily work. In my opinion, the real test of the power of an embedded quality improvement approach came during the global pandemic COVID-19. Our experience and that of others are captured in the chapter by Dawson and colleagues, providing a fresh and timely look at the role of quality improvement in times of extreme crisis.

Finally, we must also be able to measure change in a meaningful way, so that we can know where we are headed and how well we are doing. There appears some strong evidence gleaned through research carried out by faculty at Warwick Business School regarding the processes and structures that support delivery of high quality, affordable and equitable healthcare. As Crump highlights, we need to develop understanding of the outcome measures we apply to success in our endeavour. We must, therefore, continue the research agenda and address the myriad of issues raised in this edited book.

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PART I

Institution and Environment for Sustainable Healthcare

CHAPTER 2

Integrated and Networked Healthcare Systems: The Canadian Example

Trish Reay

Introduction

Integrated care systems (ICS) are currently being implemented in a number of healthcare systems around the world. They are viewed as a way to coordinate the efforts of multiple organizations that are involved in planning for, paying for, and providing publicly funded healthcare—including mental health and community care services. The trend toward ICS is global because the provision of healthcare services, particularly within publicly funded systems, is increasingly threatened by rising costs

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and difficulties in delivering effective and efficient care at the client–provider interface. In a world of increasing specialization of healthcare professionals, and the associated narrowing of professional responsibilities, a healthcare team (rather than an individual provider) is needed to meet the needs of clients. And yet, most healthcare systems are not set up in a sufficiently integrated way to support the collaborative care that is required. Canadian experiences suggest that ICS can support the development of collaborative care teams where high-quality services are provided within a framework of reduced administrative costs.

In Canada, there have been ongoing efforts throughout the past decades to integrate healthcare services. Since healthcare is a provincial (not federal) responsibility, the Canadian system is really an amalgam of ten provincial and three territorial government systems.[1] However, each provincial system is guided by the overall Canada Health Act (Tiedemann, 2019), and although there are differences across provinces, from a global perspective the provincial systems have a high degree of similarity. All residents receive medically necessary healthcare services at no personal cost. Each provincial government budgets a significant portion of revenues to deliver these services, and with continually escalating costs, there are ongoing efforts to "do more with less." That is, governments consistently search for more effective and efficient approaches.

Prior to 2008, all Canadian provinces took a regionalized approach to healthcare delivery, giving delegated authority to regional boards that were required to manage resources and oversee the provision of services in ways that were aligned with government and regional needs. This meant that within each province, geographic regions were designated as Regional Health Authorities (RHAs). Government funds were transferred to each RHA, with the assumption that local decision-making would lead to the most effective and efficient use of public funding while consolidating and protecting the needs of local citizens (Doberstein, 2020). However, provincial experiences showed that because of the complexity, "regionalized healthcare created significant barriers to effective and efficient delivery of services" (Manitoba Government, 2018). Studies have shown that anticipated cost-savings were difficult to achieve,

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[1] In addition to ten provinces, there are three Northern Canadian Territories (Yukon, NWT, and Nunavut). Each territory has a relatively small population (50,000 or less) spread over a large geographic area. Territories are governed by elected representatives but with a high degree of federal government oversight.

and patient care deteriorated in some cases because gaps between organizations prevented the development of effective inter-disciplinary care teams (Barker, 2021). In 2008, Alberta was the first province to move away from RHAs to a province-wide integrated health system. This meant that instead of multiple geographically determined health regions, all services were centralized at the provincial level. Two provinces (Prince Edward Island, and Saskatchewan) made similar transitions shortly afterward, while other provinces (British Columbia, Ontario, Nova Scotia, Quebec, Manitoba, New Brunswick, and Newfoundland & Labrador) continue to provide services through a regionalized system.

At the service delivery level, provinces also differ on their level of focus on an integrated team approach in the provision of care. Some provinces have committed to a model of delivering integrated services through collaborative primary healthcare—where teams of interdisciplinary professionals collectively meet client needs—particularly for patients with complex conditions. Most provinces (Alberta, Saskatchewan, Prince Edward Island, Ontario, British Columbia, Nova Scotia and Quebec) have already moved to this type of collaborative approach. Others (Manitoba, New Brunswick, and Newfoundland & Labrador) are currently (2021) continuing with an individual professional model, but in the process of shifting to a collaborative model of service delivery. This shift is in line with an overall trend toward collaborative primary healthcare as a way to focus on maintaining healthiness of the population and thus reduce the need for expensive services such as emergency room visits and lengthy hospital stays. The anticipated goal is a reduction in overall costs, but such savings are difficult to track because of the lengthy time lag between implementation and improved health indicators (Barker, 2021).

Based on these two categorizations of regional vs integrated, and individual vs collaborative approach to primary healthcare, it is possible to identify four different types of provincial approaches to service delivery (see Fig. 2.1). These categories provide a framework for considering the experiences of systems with integrated services at the provincial level, and integration of professional services at the local (professional provider) level. The four quadrants show the identification of four types of approaches: Integrated Collaborative (IC), Regional Collaborative (RC), Integrated Individual (II), and Regional Individual (RI).

Drawing on this categorization of provincial approaches, I next explain each approach in more detail and consider the associated benefits and challenges with consideration of connections between the healthcare

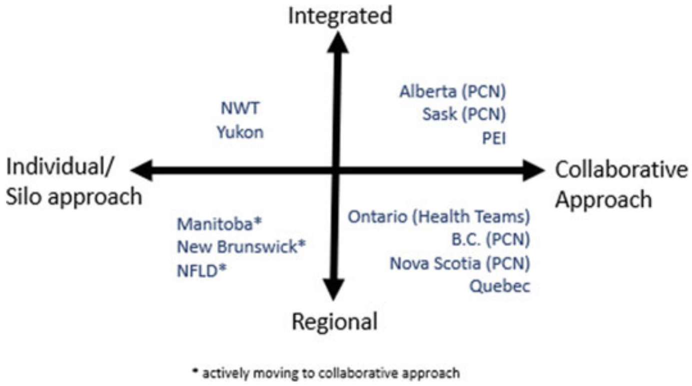

Fig. 2.1 Provincial healthcare integration at system and local levels

management literature and studies of organization theory (Reay et al., 2021). Table 2.1 summarizes the key points.

Integrated Collaborative (IC)

In this category, the delivery of healthcare services is integrated at the provincial level, and a collaborative team approach is in place at the point of service delivery. The benefits of this arrangement include a synergetic overall approach of integration that may alleviate some of the potential for role confusion at the team level (Valaitis et al., 2020). For example, when mental health and addictions services are integrated at the provincial level, the inclusion of mental health professionals in collaborative health teams is more easily accomplished. In addition, a more integrated system at the provincial level can support more streamlined reporting structures for inter-professional teams that facilitate better dissemination of healthcare priorities and uptake of best practices (MacNaughton et al., 2013).

With an integrated provincial system, it is possible to share data across different components of the healthcare system. For example, with integrated systems, patient data can be accessible by acute care, primary care, and mental health providers, no matter where the client resides within that province. The availability of such information facilitates improved care by inter-professional teams and reduces repetition of laboratory tests or procedures because of unknown previous results. Provinces in the IC

Table 2.1 Overview of provincial healthcare integration in Canada

Type	*Description*	*Examples*	*Benefits*	*Drawbacks*
Integrated/ Collaborative (IC)	One provincial authority responsible for the coordination of healthcare, collaborative teams of physicians, and other health service providers work together to provide primary health	**Alberta** (Alberta Health Services and Primary Care Networks) **Saskatchewan** (Saskatchewan Health Authority and Health Networks) **Prince Edward Island** (Health PEI and Primary Care Networks)	Easier information sharing, Better resource allocation, Lower costs associated with records management, better coordination, Reduction of duplicate services	Tight connection to provincial authority may restrict autonomy; Reduced ability to make local decisions can impact professional morale
Regional/ Collaborative (RC)	Provincial authority delegates health decisions to various regions. Teams within each region provide collaborative healthcare	**Ontario** (34 Public Health Units, 14 Local Health Integration Networks)[a] **British Columbia** (5 regions, Primary care networks) **Nova Scotia** (4 Health zones, Collaborative Family Practice Teams) **Quebec** (18 health regions, Family Medicine Groups)	Services focused to meet local needs; Better ability to incorporate community voice; Health professionals are embedded in the community; Funding decisions made to meet local needs	Difficult and expensive to share data across regions; Local ways of service provision may become entrenched; More expensive and cumbersome records management and general administration
Regional/ Individual (RI)	Provincial authority delegates health decisions to regions. Within the regions service providers work independently	**Manitoba** **New Brunswick** **Newfoundland & Labrador**	Community voice is strong; Services tailored to local needs; Relationships between communities and physicians are critical	Difficult and expensive to share data across providers; Local services may be limited resulting in increased emergency room visits and transfers to larger centers; Strong silos in primary care with heavy reliance on physicians

(continued)

Table 2.1 (continued)

Type	*Description*	*Examples*	*Benefits*	*Drawbacks*
Integrated/ Individual (II)	One provincial (federal) authority responsible for coordination of healthcare. Professionals work independently, relying on referrals outside the region as needed	**First Nations** (Federal oversight, individual nations provide health) **Northwest Territories** **Yukon Territory** **Nunavut**	Community voice is strong; Services tailored to local needs; Relationships between communities and providers is critical	Difficult and expensive to share data across providers Difficult, expensive, redundant records management. Only basic services available locally; shortage of health professionals

Note [a]In 2020 Ontario amalgamated their public health units and LHIN Under “Ontario Health” and created “Ontario Health Teams.” This integration is still underway category are still working toward full access to province-wide electronic record databases; however, the progress has rapidly increased as provincial integrated care systems became firmly established (Barker, 2021).

There is an expectation that overall healthcare costs can be best contained with integrated provincial systems and collaborative care approaches. When provinces opt to integrate services it allows them to also coordinate shared services such as supply chain, capital planning, human resources, bargaining units, and oversight boards. This in turn streamlines costs and allows a new level of fiscal responsibility. However, integrated structures at the provincial level tend to become tightly connected with the government currently in power, and thus a high degree of decision-making authority can become closely attached to political pressures. At the professional team level, this tight connection to government politics has been attributed to low morale and anxiety among inter-professional team members because they believe they have reduced ability to make local decisions, and worry about the sustainability of government policies and funding (Misfeldt et al., 2016).

Regional Collaborative (RC)

In this category, the overall responsibility for the provision of healthcare services is delegated to a regional health board established to determine priorities and funding levels within a geographically bounded region. Similar to the IC category above, a collaborative team approach is in place at the point of service delivery. The benefits of this arrangement include the ability to focus healthcare services in ways that meet the needs of a particular geographic region. For example, rural regions with relatively sparse populations have the ability to provide services that incorporate transportation to larger centers for care. In addition, mental health and addictions services can be provided in ways that best match with community values. The regional focus helps to support cohesive collaborative teams at the service delivery level, encouraging locally knowledgeable health professionals to become embedded in the community and see themselves as local resources (Robinson et al., 2006). Overall, a regional system means that funding decisions about mix of resources and overall objectives are made in much closer proximity to the healthcare providers and the local citizens. However, it also leads to a more diverse set of healthcare priorities and practices across regions, and less ability of the provincial government to control costs and encourage best practices (Teper et al., 2020).

Data sharing is particularly difficult in a regionalized system. Provinces with regional approaches have different electronic record databases in each region, and sharing data across regions has proved to be a major barrier to collaboration. In addition, experiences show that health professionals and administrators become frustrated with the time and energy required to review health records, and then send information by email, or even being required to make telephone calls to gain relevant patient data (Teper et al., 2020). Regions also tend to become entrenched in their individual bureaucracies, making it even more difficult to find common ground across regions that enable data-sharing protocols. British Columbia (BC) is set up with a regionalized system, but ongoing difficulties with sharing data have pushed officials to develop a new plan for "Clinical and System Transformation" that aims to integrate data systems across three of the regions as part of a gradual move toward integration across all regions (Cadoret et al., 2020).

In addition to reduced control over budgeting in comparison with the provincially integrated services model, studies show that records management and other administrative functions are more difficult and more expensive. Systems tend to be duplicated in each region, with higher overall costs. Although an initial argument in favor of regionalization was the development of healthy competition between regions that would reduce costs, labor shortages (especially nursing and physician shortages) led to regions out-bidding each other to attract much needed healthcare staff. The result was significantly increased costs overall (Ontario Health, 2020).

Regional Individual (RI)

Here, as is the case in the RC category, the overall responsibility for the provision of healthcare services is delegated to a regional health board. It is at the regional level, bounded geographically, where decisions are made about the mix of services, spending priorities and funding levels. However, rather than focusing on a collaborative team approach at the point of service delivery, professionals work relatively independently from each other—making referrals to other services when needed. For example, general practitioners work alone, referring patients to other services, such as physical therapy, mental health and addictions treatment, or particular nursing services. The overall reported benefits are the preservation of community voice and tailoring of services to match with regional needs. However, this approach has been labeled as more expensive because of the individual approach in providing services. It is also seen as being difficult for patients to navigate the system compared to collaborative approaches.

Data sharing is difficult within a regionalized system because the regional boundaries limit the types of data that are easily transferred from one region to another. Similar to the RC category, different data storage systems in different regions make it almost impossible to access patient information in a different region. This situation arises if citizens travel to another region and require health services. It also arises when rural patients develop serious conditions and must be transferred to an urban region that can provide higher acuity services. The difficulties of transferring information are even more problematic in an individually focused approach to providing services. Since complex care is managed through referrals from one professional to another, there is a high degree of information transfer required; however, regionalized systems can be particularly poor at facilitating such information transfer.

Analyses suggest that regional model makes it more difficult to control overall costs, because regional board members have incentives to please their local citizens, and find ways to overspend. In addition, synergies of collective buying and cost sharing in an integrated system are foregone. Adding to this, costs associated with individual (rather than collaborative) approach to service provision are similar for patients with relatively minor and straightforward health concerns (Robinson et al., 2006). However, for people with complex needs, the collaborative approach shows potential for moderating costs of care because different professionals work closely with each other and the patient to maintain stability. For example, collaborative care for diabetic patients can help prevent complications and reduce the need for much more expensive acute care services, such as hospitalization or emergency room visits (Teper et al., 2020).

Integrated Individual (II)

It is only the northern Canadian territories where the healthcare system has integrated approach at the government level, but an individual provider (rather than collaborative team) for delivery of services. Each of the territories is sparsely populated with relatively few healthcare providers. As such, nurse-practitioners and registered nurses are key providers (Peckham et al., 2018). In some centers, there may be a physician who resides in the community, but more commonly physician services are provided by fly-in doctors. When any type of complex care is required, patients are transferred out of the territory, south to larger cities. As a result, the type of healthcare services provided in the territories is basic, and there are no collaborative teams because there are very few healthcare professionals. There are many challenges to providing services—largely because there are very few people spread over a very large geographic area. People living in the area find it difficult to obtain services, costs are high, and healthcare outcomes are generally poor.

The Impact of Integrated Provincial or Regional Systems on Collaborative Care

The benefits and challenges of each approach (IC, RC, RI, and II) as summarized in Table 2.1 point to a potential impact on collaborative care. Given the importance of multi-disciplinary approaches to complex patient conditions, as well as the need for integration of community and health services as part of preventing illness, it is critical to consider how different integration approaches affect the ability of health professionals to deliver high-quality collaborative care. In the following section, I draw on organization theory and empirical studies to explain the nature of the impact. Since many of the key benefits and challenges point to relationships between organizations and professionals, as well as the location and arrangement of services, I focus on the following topics that have received previous attention in the organizational literature as important factors in the provision of healthcare services: (1) Organizational Leadership and Authority, (2) Professional Identity and Inter-professional Dynamics, (3) Communication, and (4) Organizational Place and Space.

Organizational Leadership and Authority

The topic of leadership in healthcare settings is one that consistently generates ongoing conversation and controversy. Because professionals work within contexts such as hospitals and other healthcare organizations, their professional authority tends to bump up against organizational managers. This is particularly the case for physicians, who are typically considered to hold the highest level of authority with respect to patient care; however, hospital administrators, for example, determine levels of funding, availability of equipment, and staffing levels. This division of authority often leads to disagreement about who is the "real" leader, and who has the right to make decisions about how the provision of care is organized (Fiol et al., 2009). Some healthcare systems or organizations attempt to manage such concerns by appointing dual leaders for each major organizational division. For example, within the surgical department of a hospital, there may be a physician leader teamed with an organizational leader who work together to plan for, and deliver services. Other systems have adopted a hybrid approach—each manager must be both a professional and an organizational manager. This approach is characterized by "nurse managers" and "physician managers" who take on key leadership roles, and are assumed to hold authority from both a professional and managerial perspective.

At the level of multi-disciplinary teams, the same challenges of leadership and authority play out, although in slightly different ways. In order to effectively set up and gain the intended benefits from integrated care systems, it is critical to find ways of managing the potential clash of professional vs. organizational authority (Gilmartin & D'Aunno, 2007). This means that at the team level, leadership must be structured in a way that facilitates joint organizational and professional decision-making. In addition, to create the desired multi-disciplinary approach to service provision, leadership must also be viewed as a process that transcends the usual hierarchy of professional responsibilities, where physicians must always be at the top (Gilmartin & D'Aunno, 2007). (See Currie et al. [2012] for an excellent example showing the power of physicians to control multi-disciplinary team dynamics.) When leaders find ways to manage the authority hierarchy among professions, research shows that positive outcomes for multi-disciplinary teams can occur; relational coordination can improve, and change initiatives are more likely to be successful (Huber et al., 2020).

Within the Canadian context, the different structural approaches to integrated services across provinces show the importance of leadership and authority. Smith-Carrier et al. (2015) showed that designating particular professionals as "team lead" often gave the illusion of clinical democracy, but failed to establish multi-disciplinary teams that overcame traditional hierarchical authority to provide the most appropriate services for patients. Similarly, MacNaughton et al. (2013) found that typically multi-disciplinary teams are led by physicians or nurse-practitioners who are viewed as the top of the hierarchy, and who follow traditional medical models by using their power to delegate authority following the established chain of responsibility. In contrast, researchers continue to argue that the goals of multi-disciplinary care can only be met by putting the patient at the center of the team—not by perpetuating professional hierarchies (Smith-Carrier et al., 2015). It is essential for professionals on the team to provide services within their scope of practice, and to communicate across professional boundaries to avoid internal conflict and ensure that patient needs are the foremost concern (Teper et al., 2020).

Referring to Table 2.1, in the Canadian cases where services are integrated at the provincial level (IC and II), collaborative teams tend to be modeled on the design established provincially. For example, in jurisdictions where provincial services are hierarchically managed with clear authority given to physicians, multi-disciplinary teams at the service level tend to be organized similarly. Alternatively, when provincial-level leadership involves strong non-physician managers or relies on hybrid professional managers, frontline teams are more likely to follow that approach. As a result, the Integrated/Collaborative design that is increasingly employed seems to hold strong potential for achieving the goals of collaborative care for patients with needs crossing the disciplinary divides. In particular, the integration of mental health practitioners with other health professionals on primary healthcare teams shows promise for community treatment and reduction of hospitalizations (Letourneau, 2009). The Integrated Individual (II) approach is only evident in the Canadian north, where populations are small and widely distributed. In these cases, there are typically few physicians in residence; services are predominantly provided by nurses and nurse-practitioners who tend to work together with all available healthcare and community providers, including police officers. Thus, collaborative care is essential, but the overall availability of services is minimal with "fly-in" physicians for some types of patient care, and "fly-out" for patients with severe needs.

When healthcare services are regionalized within provinces (RC and RI), leadership and authority can be established in ways that reflect different community needs and values. This argument was a driver for creating regional health authorities—encouraging local decision-making and tailoring of services for different population groups. However, experiences suggest that this more focused view can lead to entrenched approaches to healthcare service delivery, with increasing variation from one region to another. In some cases, regions compete with each other for professional staff and other resources, making leadership decisions more focused on out-maneuvering other regions, and less about providing the best quality healthcare services (Teper et al., 2020).

Professional Identity and Inter-Professional Dynamics

Professional identity, how professionals see themselves, is critical to all aspects of the work healthcare professionals do (e.g., Pratt et al., 2006). Earlier studies of professionals and professional identity focused on the creation and maintenance of boundaries regarding who is allowed to do what. Freidson (1970) explained the importance of each profession controlling their own membership and also controlling the nature and quality of services provided. As the number of different professions in society increased through the past decades, scholars turned their attention to how different professions could work together within a system, and yet develop clear boundaries to distinguish the type of services provided by each profession (Abbott, 1988). Healthcare is a system where such boundaries have been well established over time, and where ongoing efforts by professional organizations serve to keep the boundaries as clear as possible (see Bucher et al. [2016] for an example of professional boundary work).

However, the concept of integrated care systems and collaborative teamwork stands in contrast to the established systems of professions with clear boundaries delineating particular work and responsibilities for each profession. For example, Reay et al. (2017) showed the difficulties encountered with an initiative designed to deliver primary healthcare through multi-disciplinary teams instead of the traditional solo-physician treatment model; this research revealed the importance of physician identity change—they had to see themselves as part of a collaborative team instead of an independent practitioner. Other studies have also shown the importance of managing boundaries between professional groups in healthcare, particularly during times of organizational change when team-level collaboration or competition activities can facilitate or derail desired outcomes (e.g., Feyereisen et al., 2018; Nancarrow & Borthwick, 2005).

The role of healthcare managers in facilitating the role and identity of professionals within organizations is also critical to the implementation of multi-disciplinary teams. For example, Chown (2020) and Kellogg (2018) showed that managers may be able to influence professional participation in innovative approaches through carefully designed financial incentives or through targeted strategies to enlist other health professionals or semi-professionals as agents in change initiatives. Such approaches rely on the integral connection between professional identity and professional work. When asked how they see themselves, professionals typically respond by explaining the work that they do (Pratt et al., 2006). With a desired shift toward multi-disciplinary teams in primary healthcare, the relational definitions of self that rely on intergroup comparisons become essential to understand (Stryker, 2007; Tajfel & Turner, 1985). Thus, it is critical to focus attention on macro- and micro-level change dynamics when attempting to bring different professionals together in teamwork, as shown by Chreim et al. (2007).

These concepts from the organizational literature are evident in the Canadian experience to date. Reports on the start-up of collaborative have revealed the difficulties. For example, a nurse practitioner described their team as follows:

> We are a functional-dysfunctional family...when they [were] hired, everybody was a very strong practitioner and came with their own ideas, which was an excellent thing so we can be very autonomous. But you also get a lot of personality quirks...So it's just trying to get all of these people, who are used to working on their own, none of us really came from teams. (Smith-Carrier et al., 2015, p. 240)

In terms of the different arrangements within which multi-disciplinary teams exist (IC, RC, II, and RI), there is a tension between the ability of professionals to easily connect with their professional regulatory bodies located at the provincial levels, and the closeness to community that is a part of regional arrangements. Referring to Table 2.1, when services are managed at the provincial level (Integrated—IC and II), professionals are in direct contact with their professional association and with government managers. For example, physicians report that they are supported by the Medical Association. On the other hand, when services are managed at the regional level, the connections with professional associations become blurred. Physicians have reported their satisfaction with being "closer" to the community, but express frustration in being able to manage both the regional administration and provincial professional groups. In some regionalized systems, physicians have navigated these concerns through the creation of regional medical associations that provide advocacy and knowledge sharing at the regional level (MacLeod et al., 2020). These initiatives reveal the importance of professional identity, and strategies for managing any changes to identity as part of effective multi-disciplinary teams. In addition, it is notable that initiatives to encourage the development of a professional team identity at the local level can be important in the provision of effective healthcare services (Reay et al., 2016).

Communication

Effective communication between and among different healthcare professionals and different levels of providers is always essential, and of particular importance with respect to integrated and networked health systems. Government policies and procedures must be clearly and quickly communicated to all relevant providers throughout the healthcare system, which becomes increasingly difficult with increased desire for interconnectedness. Professionals working at the front lines need to have consistent access to updated information, and they also need to have clear lines of communication with their respective professional associations. Such distribution of information from the "top down" moves best through the hierarchical authority structures that tend to characterize healthcare systems. However, other types of information—particularly patient records of diagnoses, treatment, and test results, as well as up-to-date information about innovative treatments—can be transported effectively through established networks (Battilana & Casciaro, 2012).

There are two key types of communication networks that are important to consider: (1) computer access database networks for patient records, and (2) social networks for sharing best practices and spreading promising new ideas. First, regarding clinical databases that hold patient information—although there is value when patient records are centralized because they are easily accessible in times of emergency, or when patients seek services from multiple locations, the danger of revealing private concerns remains an ongoing counterargument (Afzal & Arshad, 2021). Physicians have been particularly vocal about restricting access to patient records, sometimes suggesting that they should be the only healthcare professionals with full access (Mandl et al., 2001). However, in spite of physician concerns, there is an increasing trend for centralized databases with advanced computerization and improved security features. Such systems increasingly allow access by many healthcare professionals (e.g., pharmacists, registered nurses) to medical records of all patients in the database—in the Canadian system this means all citizens. However, the transition to province-wide information systems is slow. Some computer systems do not connect well with others, and particularly in provinces where services are regionalized, the system in one region may not be compatible with those used in other regions. As a result, communication across providers and locations can be difficult, and multi-disciplinary teams may particularly struggle as a result.

Regarding social networks that are important for sharing best practices in healthcare—a key factor influencing the effectiveness of knowledge transfer is the tendency of within-profession (rather than across-profession) communication patterns. Different relationships and ties within networks make a difference to the way information is shared; these can improve or impair the development and implementation of new ideas that cross-professional boundaries (D'Andreta et al., 2016; Valente & Pitts, 2017). Recent research points to the importance of network brokers (those who bridge geographic or knowledge boundaries), showing that key individuals or groups can significantly improve or reduce the travel of knowledge about new ways of delivering services (e.g., Currie & White, 2012; Nigam et al., 2016; Tasselli, 2015). Collectively, these studies help to reveal the importance of active efforts to share information, particularly when multi-disciplinary teamwork is desired.

Referring to Table 2.1, in the cases where services are integrated at the provincial level (IC and II), communication regarding patient data tends to occur relatively easily with databases established at the provincial level. Although there is room for improvement, studies show that healthcare providers in such systems are able to access relevant patient information to inform decision-making process in frontline collaborative teams (Avdagovska et al., 2020). This stands in contrast to regionalized systems (RC and RI) where different computer systems in each region may not be well-connected; as a result, communication of patient information with a region is relatively easy, but cross-region information transfer is slow and cumbersome. An Ontario Health Teams report (Smith-Carrier et al., 2015) revealed that many patients, families, and caregivers found it confusing and difficult to transition from one provider to the next, particularly if it involved crossing regional boundaries. These reports included descriptions of long waits for care because relevant patient information could not be located, and the need to frequently repeat health histories or fill out duplicate forms when moving across regions, or when accessing services from different healthcare professionals.

In terms of networking and knowledge sharing among healthcare professionals, systems integrated at the provincial level (IC and II) provide easy transfer of top-down information; however, multi-disciplinary teams may struggle more than in regionalized approaches (RC and RI) to share knowledge among themselves because of the strength of within-profession communication channels. Robinson et al. (2006) showed that hierarchical structure and/or lack of coordination and geographic factors (i.e., distance from larger population centers) were described more often as barriers to capacity building in terms of contributing to poor internal communication and coordination of health promotion efforts and weak community participation and external coordination of activities respectively. In addition, Misfeldt et al. (2016) found that building relationships among team members was more difficult when team members consistently worked non-overlapping schedules.

Overall, communication advantages of integrated systems with respect to accessing patient information stand in contrast to a closer community connection for regionalized systems, where localized cross-professional knowledge sharing networks help to facilitate strong teamwork dynamics.

Organizational Place and Space

Organizational research is increasingly giving attention to the role of the geographic place where organizations are situated, and to the organizational space(s) where people work. In healthcare and other organizational settings, both place and space impact relationships among people, and also affect the accomplishment of work (e.g., Dale & Burrell, 2008; Wright et al., 2021). Organizational space has been defined as "the built environments that emerge from organizational activities, objects, arrangements, and social practices" (Stephenson et al., 2020, p. 797). We know that some office arrangements and building layouts can be more conducive to collaborative work than others (Kornberger & Clegg, 2004); however, we also have evidence that designing a building to promote collaboration does not ensure that collaboration will occur (Irving et al., 2020). The importance of organizational space has been revealed in some studies of multi-disciplinary healthcare teams. For example, Misfeldt et al. (2016) reported that some professionals identified the lack of building space, including clinical space, classrooms, and office space in particular as a barrier for team performance; they noted that some healthcare offices and clinics did not have adequate space for multiple team members, limiting their ability to meet and develop relationships or discuss patient care. In this same study, people explained how difficult it was to engage in collaborative care when different team members had different work schedules, making it logistically difficult to "juggle the space" (Misfeldt et al., 2016). Interestingly, when joint office space is provided, it is viewed as "status quo" and not necessarily a facilitator to better healthcare, however when office space is disjointed, it is viewed as a barrier (MacNaughton et al., 2013).

When considering the place in which organizations are located, we know that geographic location makes a difference in many respects. Much of the literature on organizational place is grounded in studies of social geology, connecting location with a deeper understanding of human behavior. In this tradition, places are linked to specific geographic coordinates or locations; thus they hold common histories associated with that place and a sense of community becomes intertwined with that place. In the Canadian healthcare context, geographic "place" plays a critical role. There are important differences in providing services to a largely urban population compared with rural or northern communities where distances to tertiary healthcare services are often measured in terms of hours (not minutes), and where airplane or helicopter transport is the only effective mode of travel for emergency situations. In addition, many northern communities are economically reliant on particular industries, such as fossil fuel extraction, mining, or lumber. In such cases, the provision of healthcare is tightly connected with the strength of employment levels—if a community mine closes, new healthcare concerns become salient with limited income levels and associated mental health concerns. These geographic factors have led to northern Canadian territories (Yukon Territory, Northwest Territories, and Nunavut) providing services through an Integrated Individual (II) approach, because of their small, sparse population base. Similarly, some provinces have chosen to regionalize healthcare services so that northern communities can be organized somewhat differently from the more urbanized southern communities.

With respect to Table 2.1, it is notable that regionalized approaches (RC and RI) provide provinces with the ability to adapt service provision depending on the different geographic places within each province. For example, British Columbia maintains a regionalized approach to tailor the development of multi-disciplinary teams differently in northern regions compared to more populated southern areas. However, the much smaller populations of the Territories make regions unworkable, and thus they organize as an integrated system with individual providers vs. multi-disciplinary teams, given the small number of healthcare professionals overall. Collaborative teams can function well in either integrated or regional approaches. For example, in the IC and RC cases, the arrangement of organizational space in coordination with other supports is associated with high-quality teamwork initiatives.

Implications for Practice

This analysis of Integrated Care Systems (ICS) in the context of Canadian healthcare provides food for thought about ways of organizing systems that enable both high-quality services for patients with attention to managing the associated administrative costs. The current focus on collaborative care involving multi-disciplinary teams of professions requires attention to the ways in which services are integrated at national, provincial, or regional levels. Although full costing data is always difficult to obtain, some experiences suggest that integration at provincial or national levels can help to reduce costs associated with information sharing and records management, while still preserving the important aspects of collaborative care. Further research would help to identify particular strategies that help to improve efficiencies while maintaining quality of services. There is a particular need for attention to ways in which organizational leadership and authority patterns are established, how inter-professional identity dynamics are managed, how effective communication is maintained, and how organizational space and place are used.

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CHAPTER 3

Partnership for Improvement: How a Leadership Compact Fostered Relational Change Between Five Hospital Chief Executives and Their Regulator

Nicola Burgess

INTRODUCTION

Equitable access to high quality, safe care at the lowest possible cost is fundamental to shaping sustainable healthcare. The role of the healthcare regulator is to monitor and control provider behaviours that safeguard equitable access to high-quality care provision while also controlling for risk (Baldwin et al., 1999; Hopkins & Hale, 2002; Walshe, 2003). Extensive use of performance targets as a mechanism for modifying provider behaviour aligns to a top-down power-based form of regulation prevalent within almost every public setting around the world (Bouckaert & Halligan, 2008; Kirkpatrick et al., 2005). In England, the limitations and

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unintended consequences of an arms-length, target-based approach to regulation have been dramatically exposed by some of the most tragic examples of appalling care in recent years (see, e.g., the ‘Mid Staffs scandal’ [c.f. Francis, 2013] discussed later in this chapter). Subsequently, practitioners, scholars and policymakers have called upon the regulator to temper its reliance upon performance measures and foster a more collaborative approach to regulation for improvement.

Drawing upon observational data of a monthly partnership meeting between the five hospital CEOs and members of their regulator, this chapter describes how and why a leadership compact became a pivotal mechanism for facilitating new partnership behaviours. Working in collaboration with an external not-for-profit consultancy as part of a government funded five-year intervention to ‘transform the NHS’, the aims of the partnership were two-fold: first, to develop and embed a management system predicated on quality and continuous improvement in each of the five hospitals (see Dawson et al., Chapter 11 for further description); second, to learn from the experiences of the five CEOs about how national system leaders in the NHS can support providers to foster a culture of continuous improvement within their organizations. Our empirical data reveals how a leadership compact was pivotal to the achievement of the latter aim, where nurturing new ‘partnership’ behaviours facilitated inter-organizational learning that shaped policy and practice across the wider healthcare system.

The chapter is structured as follows. First, the case for a more collaborative approach to regulation is presented; second, we examine partnership literature to review the challenges and enablers of effective collaboration for partnership. Third, we describe a compact as an explicitly negotiated, reciprocal promissory document that sets out the expected behaviours of partners to the exchange relationship and its role in facilitating relational change. We then provide further detail of our empirical context followed by presentation of findings and discussion. We conclude with a synthesis of practical implications in relation to shaping sustainable healthcare.

Regulation for Improvement: The Case for Change

The efficacy of a top-down approach to regulation has long been subject to debate. On the one hand, performance of English hospitals in terms of waiting times and resource efficiency has been strong since the introduction of hospital rating systems in the 2000s (Bevan, 2009; Papanicolas et al., 2019; Willcox et al., 2007). On the other, a recent comparative study by Papanicolas et al. (2019) found patient safety and population health performance for England had fallen below that of other high-income countries.

Scholars have repeatedly pointed to the unintended consequences of performance measurement systems that focus organizational behaviour towards the pursuit of arbitrary national targets, deflecting attention away from the pursuit of improvement aligned to patient-centred care (Burgess et al., 2015; Ghobadian et al., 2009; Gubb, 2009). Writing in the *British Medical Journal*, Gubb (2009) laments the use of targets that force managers to prioritize short-term goals to avoid punishment at the expense of nurturing an organizational culture with the capacity to learn for continuous improvement.

That managerially oriented targets embody an amplified sense of importance is exemplified in the following description of the star ratings system of the 2000s where the attainment of 'key metrics' earned hospital management 'freedoms and rewards':

> It is difficult to overestimate the importance of star ratings. In addition to facilitating accountability to patients and the public, they also serve as an important tool for concentrating management attention on key strategic priorities and national targets. They are the metrics used to determine access to a range of 'earned autonomy' freedoms and rewards, including eligibility to operate more independently of central government (so-called 'foundation status'). (Mannion et al., 2005, p. 19)

While star ratings were seen to facilitate accountability to patients and the public, Mannion et al. (2005) report compelling evidence that the star rating system produced management 'tunnel vision'. In other words, managers relentlessly direct attention to areas of performance that are measured, and to the exclusion of other important but unmeasured areas. In a tragic example of the dysfunctional behaviours that managerial 'tunnel vision' can engender, we look no further than the Mid Staffs hospital scandal. Despite being awarded foundation status in 2008, in 2009 it emerged that a culture of neglect had led to several hundred[1] avoidable deaths between January 2005 and March 2009. An independent inquiry blamed the failure on a hospital leadership focused on reaching national access targets, achieving financial balance and seeking foundation trust status at the cost of delivering acceptable standards of care (cf. Francis, 2013). Further, the Francis report bestows a damning indictment of a government-led regulatory system that "*failed to have picked up and dealt with a 'deficiency' of this scale and failed in its primary duty to protect patients and maintain confidence in the healthcare system*" (Francis, 2013, p. 4).

Tragic events such as those that occurred at Mid Staffs hospital trigger remedial calls to action alongside government backed promises to 'learn from failure'. Specifically, national system leaders are urged to move away from command-and-control regulation to adopt a more collaborative approach that fosters 'bottom-up' capacity for continuous improvement (Berwick, 2013; McDermott et al., 2015).

Towards Partnership for Improvement

We follow Dickinson and Glasby (2010) in adopting Sullivan and Skelcher's (2002) definition of partnership, where partnership involves "*a negotiation between people from different agencies committed to working together over more than the short term; aim[ing] to secure the delivery of benefits or added value which could not have been provided by any single agency acting alone … and includes a formal articulation of a purpose and a plan to bind partners together*" (Dickinson & Glasby, 2010, p. 815). Effective partnership working occurs when more value is created by working together than if each organization was to continue working alone. For Leach et al. (2014), effective partnership requires establishing and maintaining a forum for knowledge exchange and joint learning. Specifically, Leach et al. (2014) highlight the tangible benefits of enabling knowledge exchange in political contexts where "*stakeholders of different sides are learning simultaneously…increasing consensus of policy beliefs and*

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[1] Estimated between 400 and 1200 avoidable deaths occurred between January 2005 and March 2009 according to the report by Francis (2013).

paving way for collective action with constructive results such as new policy implementation" (p. 594).

But partnership working is a policy mechanism that has been tried many times before with little evidence of success (Dickinson & Glasby, 2010; Martin, 2020). Scholars have cited many reasons why the rhetoric of partnership is hard to achieve in practice. In this section, we summarize literature pertaining to the challenges of public sector partnership under four themes that constitute enablers of effective partnership.

1. *Articulate and clarify a shared vision, shared goals, and shared accountability*
   A frequently cited barrier to partnership working in a healthcare context is the plurality of goals, objectives, and agendas. Failure to articulate and clarify a shared vision can serve to amplify diverse agendas and motivations, making it difficult for organizations to justify their commitment to a collaborative endeavour (Hartley & Rashman, 2018; Kelman et al., 2013). Similarly, Dickinson and Glasby (2010) underscore the importance of a clear strategic focus alongside clear and equitable accountability; but the authors caution against unrealistic and over-ambitious goals and objectives that can undermine stakeholder enthusiasm and morale, limiting the longer-term sustainability of the partnership.

   Attention to practical details concerning new ways of working, specifically with regard to the transformative role of leaders and managers, and mechanisms that hold organizations (and individuals) to account are vital to sustaining commitment over time (Perkins et al., 2020). Without formal accountability, changes in the internal and/or external organizational context can render well-intended promises to the bottom of the priority pile. Classical management practices that manage and monitor performance are commonly associated with managing hierarchy-based relationships, where one stakeholder holds more power than the other; when organizations work together in partnership the use of classical approaches appear counter-intuitive. Alternatively, Kelman et al. (2013) recommend implementation of 'hierarchy-light' management practices. Hierarchy-light practices enable stakeholders to jointly monitor progress towards shared goals, and jointly acknowledge and celebrate 'small wins' to further incentivize a continued collaborative effort (Ansell & Gash, 2008).

2. *Build trust*
   All effective relationships depend on trust (Blau, 1964). Mayer et al. (1995) define trust as "*the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party*" (p. 712). Without trust, voluntary contributions towards shared goals rapidly dissolve (Ansell & Gash, 2008; Kelman et al., 2013). Thereby, attention to processes that foster a safe relational space, where trust among partners can be built over time and where mechanisms to repair and safeguard that trust in the event of conflict are essential for effective partnership working (Warsen et al., 2019).
3. *Invest in frequent face-to-face dialogue*
   Scholars have emphasized the extensive time investment necessary for the facilitation of good partnership relationships (Huxham et al., 2000; Perkins et al., 2020). The importance of frequent face-to-face meetings that enable reciprocal interaction through which a shared sense of identity can emerge has been noted by several scholars. For example, Ansell and Gash's (2008) model of collaborative governance identified face-to-face dialogue as important for trust building; Williamson (1989) goes further to assert repeated personal contact across organizational boundaries produces social levers of control that inhibit opportunistic behaviours to pursue self-serving objectives; and Jones et al. (1997) propose frequent meetings as a mechanism for promoting the exchange of customized tacit knowledge. Williamson (1989) also identified frequent face-to-face dialogue as an important mechanism for reinforcing shared goals, promoting a shared sense of identity and foster a greater sense of mutual trust (see also Hardy & Phillips, 1998).
4. *Create mechanisms to manage conflict*
   Hunter and Perkins (2012) list conflict as deleterious to successful partnership while others are more pragmatic. For example, Warsen et al. (2019) contend conflict is inevitable since organizations and individuals embody different perceptions and interests (Bertelli & Smith, 2010; Klijn & Koppenjan, 2016); what matters is how (and how soon) conflict can be resolved. Drawing attention to aspects of power distribution, Hardy and Phillips (1998) argue conflict can produce positive outcomes, as it forces actors to engage in deeper reflection and discussion. Further, Hardy and Phillips (ibid.) identify

'discursive legitimacy' as having a profound impact on the effectiveness of a collaboration, even in the absence of formal authority. Discursive legitimacy is a relational form of power, those who have it are able to influence the processes of social construction in ways that suggest they are speaking on behalf of others, rivalling those with more traditional forms of power and who may appear self-serving (cf. Phillips & Brown, 1993). Hence, while conflict may be inevitable, attention to discursive processes and how they might be harnessed to avoid, mitigate and/or produce time-sensitive resolution of conflict presents an opportunity to preserve trust, safeguarding partnership behaviours even when power and status asymmetry persist.

Facilitating a New relationship—The Leadership 'Compact'

A 'compact' is best described as an explicit (written), reciprocal and 'promissory' agreement that sets out the expected behaviours of both parties, commonly referenced as "*the gives and the gets*" of an exchange relationship.

Most exchange relationships (e.g. between an employer and employee) are underpinned by an individual's implicit beliefs concerning what they perceive their employer expects from them, and what they believe they can expect from their employer in return. These perceptions are based on an individual's cognitive schema, representing a combination of experience, knowledge, and early socialization in the workplace that make up an individual's psychological contract (Alcover et al., 2017; Rousseau, 2001).

Changes in organizational context can produce misalignment between organizational priorities and goals, and an individual's long-standing (implicit) psychological contract. In a healthcare context, Kornacki and Silversin (2015) explain how the deep-rooted traditions of medical professionals have produced long-held perceptions of entitlement, autonomy and protection that present a major source of change inertia and change failure. Gary Kaplan, CEO of Virginia Mason Medical Center in Seattle, USA, explains how a compact became a mechanism through which managers and doctors could challenge the 'old deal' and jointly create a 'new deal' based on a shared goal of becoming a patient-driven organization.

> A compact is a reciprocal agreement. It's not a job description for doctors or for leaders. It's not a legal document that you sign. It's a reciprocal agreement. And you know, I used to be so proud of saying "We are a physician-driven organization." I would never say that today. We're a patient-driven organization. And so, as part of changing that paradigm, that way of thinking, we realised that we had to have a deep conversation within our organization. We had to challenge the old deal. (Gary Kaplan, CEO, Virginia Mason Medical Center, Interview December 2018)

Those who are sceptical might wonder how a compact, as a promissory agreement (not a job description or a legal document), might retain salience when environmental pressures can lead organizations and individuals to revert to old behaviours aligned to their long-standing (implicitly held) traditions. With reference to our empirical context, how can hospital CEOs supplant perceptions of their regulator as persons to fear based on experience, with persons to be trusted enough to permit honest and frank knowledge exchange in pursuit of a shared goal of improvement. We address this question in the remaining sections of the chapter. First, we describe our empirical context in detail, introduce the leadership compact that was co-created between members of the regulator and five hospital CEOs, and through our findings and discussion we seek to explicate how and why the compact became a successful mechanism to foster relational change and enable partnership for improvement.

Empirical Context

Our empirical example is extracted from a longitudinal evaluation of a government funded partnership between a US-based not-for-profit healthcare consultancy, five English hospital Trusts, and the English NHS regulator. The goal of this five-year partnership (2015–2020) was to transfer knowledge from the external healthcare consultancy to partnership stakeholders to develop bottom-up capacity for improvement within each of the five hospital trusts. The research evaluation commenced in January 2018 and concluded in July 2021.

The evaluation was designed to look at the impact of the partnership from the perspective of performance outcomes in relation to each of the five hospitals using a combination of qualitative and quantitative research methods. However, it quickly became apparent that a monthly 'partnership meeting', between senior representatives of the NHS regulator and the chief executives (CEOs) of five English hospital trusts, provided an unexpectedly rich context for analysing processes of partnership working between a regulator and regulatees (the five hospital CEOs). Our non-participant ethnographic observations of the monthly partnership meeting (known as the Transformation Guiding Board, hereafter TGB) occurred initially by coincidence, since the evaluation team were required to introduce themselves via the TGB at the start of the evaluation process. At this initial meeting, it was quickly apparent that the TGB was an important enabler of partnership outcomes, and a request was approved for members of the evaluation team to conduct monthly non-participant observations of the TGB, taking extensive (verbatim) notes concerning the nature and processes of dialogue that occurred. Our observations took place between April 2018 and February 2020, drawing to a halt at the onset of the COVID-19 pandemic. Observations were supported by semi-structured interviews with all fourteen stakeholder participants (including seven CEOs,[2] four members of the NHS regulator and three members of the US-based healthcare consultancy). Both observations and interviews were motivated to understand the processes and mechanisms that facilitated relational change conducive to new partnership ways of working.

In May 2020, the TGB was reinstated as a virtual 2-hour meeting enabling the five CEOs, members of the regulator and members of the external consultancy to resume their routine partnership meeting for the ongoing purpose of accountability, knowledge exchange, learning and sharing. Observations subsequently continued and the final TGB meeting under the formal partnership contract took place on 16 March 2021 (later than expected due to the COVID-19 pandemic); at this final meeting, it was agreed that the monthly meeting of the TGB would continue 'indefinitely' (TGB meeting notes, March 2021). Continued observations during 2021 confirmed the continuation of progress reporting from the CEOs in relation to the use of the practices and tools for improvement acquired through involvement with the partnership. We also observed further enhancement of the 'partnership' with regulator representatives repeatedly calling upon the experiences of the five hospital leaders to help NHS England and Improvement shape system-wide practice and policy. Hence, we identify the TGB as an exemplary context through which

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[2] While there were five CEOs initially, one per NHS Trust, two CEOs exited their organizations, hence two additional CEOs joined the TGB in their place.

to understand the processes and mechanisms of effective partnership working.

Findings

Negotiating Partnership Expectations: The Process of Creating a Compact

Observations of the monthly partnership meeting commenced in April 2018, approximately 2 years after promises regarding 'partner responsibilities', had been negotiated and formalized into the compact document (see Fig. 3.1: an extract of the NHS partnership compact). Review of historical documentation (including emailed memos, meeting minutes and other supporting documents), alongside retrospective reflections from interview participants, enabled some insight into the compact creation process and its significance for facilitating a new partnership relationship between members of the regulator and the five hospital CEOs. Processes of negotiation were initiated at the very beginning of the partnership in 2015 with the intention of "*bringing the organizations together, giving some overall direction to the programme*" (interview, regulator G). Interviews with members of the regulator highlighted the very different way of working envisaged by the partnership:

> We were trying to create a partnership that was something different to the traditional regulator / regulated dynamic, that's partly what the compact reflects… Normally at national level you create a programme, you then performance manage the outcomes of that and then you kind of report on it, but that wasn't the intent with this, and we were really careful at the start... that was not easy for us to do because our traditional instincts are "Right, what are the 60 things you're going to measure?" And we had to move from that… I don't think we would have done it so quickly without the compact. (Regulator G)

The compact document was drafted over a short period (2–3 days) as part of an 'away day' for senior representatives of each organization. Crucially, all those involved in the partnership at senior level were involved in negotiating the compact, establishing a clear shared vision for the partnership, thinking about the management of the partnership, and specifically, the types of leadership behaviours this new way of working would require.

<table>
<tr><th colspan="2">Partnership Shared Vision:
The five hospital partners aspire to be the safest in the country and facilitate wider sharing of learning across the wider health system, demonstrating how culture change, alongside stable leadership, can improve patient care and save money. The partnership adheres to a collective ambition for the programme's success after 5 years and beyond.</th></tr>
<tr><td>Regulator Responsibilities</td><td>Hospital Responsibilities</td></tr>
<tr><td>Creating the right environment
• Behave in a positive, respectful and consistent way at all levels of interaction with hospitals, and be open and transparent;
• Maintain integrity in positive partnership working even when under external pressure, and show empathy with hospital issues;
• Be candid in offering constructive criticism and receptive in receiving it – always assuming good intent.</td><td>Creating the right environment
• Act in a way that is respectful open and transparent, with a commitment to early warning and no surprises;
• When under pressure on wider delivery, look to the method as part of the solution; not a barrier
• Work with the wider system so they have understanding of method, process and what is required to maximise benefits.</td></tr>
<tr><td>Fostering Excellence
• Enable and support the coaching and development of CEOs in exchange for commitment to remain in post;
• Make available specialist expertise, knowledge and tools to support partner hospitals.</td><td>Fostering Excellence
• Promote ambition, innovation and continuous improvement, celebrating success and learning from setbacks.</td></tr>
<tr><td>Listening, Communicating and Influencing
• Listen and act in the spirit of shared endeavour and mutual learning to support solutions;
• Communicate regularly and clearly with hospital partners and advocate for the programme with stakeholders and the public;
• Build coalition of support from the wider system to help hospital partners to implement the method and to realise the potential nationally.</td><td>Listening, Communicating and Influencing
• Maintain two way clear communications between hospital partners and regulator, seeking and providing feedback;
• Foster effective internal and external relationships built on trust and agreement;
• Ask for help and support when needed;
• Be advocates for improvement work nationally.</td></tr>
<tr><td>Leadership
• Be clear, reasonable and consistent regarding expectations on pace and progress;
• Facilitate consistent behaviours of other stakeholders;
• Commit to supporting hospital leadership and maintaining board stability, and explore avenues to reinforce that.</td><td>Leadership
• Support board stability and longevity;
• Chief executives to personally lead the programme and visibly role model the approach;
• Keep commitments on deliverables, timelines and measurement;
• Acknowledge collective responsibility with [regulator] and other hospital partners around delivery of the programme and the duty to support each other.</td></tr>
</table>

Fig. 3.1 Extract from NHS partnership Compact

Interviews revealed the challenging nature of the negotiation process with regulator respondents concerned with 'accountability', while hospital CEOs were concerned with 'protection', incorporating "*air cover from the regulator*" (CEO D, interview), and avoiding an additional burden of accountability in the traditional regulator sense. The following quotes capture the tension arising from the different perspectives and priorities of different types of organizations working together in partnership for the first time. They also highlight the concessions required on behalf of the (traditionally more powerful) regulator, considered necessary for building relational mechanisms of trust and accountability:

> Some of the work around the compact was really powerful because it was almost a step forward to say we're not going to focus on performance, we're going to behave in a slightly different way. (Regulator A)

> The chief executives wanted to have a meeting [the TGB] which was less about data point, data point, data point and more about *"How does this feel doing this? What are you doing about that? What's that meant for you?"* …checking stuff out against each other and building that level of trust that I think is [now] really obvious when you go into the room with them. They're quite open about challenges that they're having in certain areas and they're able just to like put their cards on the table and say *"This bit is hard,"* or *"I'm struggling,"* and then have constructive support from their peers. (Regulator N)

Figure 3.1 presents a snapshot of the final 'compact', listing 'responsibilities' of each partner to guide the enactment of 'partnership' towards a clearly stated shared vision.

How a Face-To-Face Monthly Meeting 'Activated' the Compact to Build Trust and Reinforce Shared Goals

Far from being a piece of paper stuck onto a wall or buried in a drawer as a distant reminder of promises made at the start of a partnership, 'reflections on the compact' was a permanent closing agenda item of the monthly TGB. The compact itself was appended to the agenda document, reinforcing the compact as a 'living document' to be reflected upon and adjusted if deemed necessary. Towards the end of the meeting each participant would in turn offer their verbal reflections on the learning they gained, the progress they've made, and what they would like to improve aligned to the shared goals of the partnership. In this way, 'reflections on the compact' presented an opportunity to appraise 'goal attainment' with respect to both the promises set out in the compact, their personal progress and reflecting on the shared partnership vision. Thereby attention to the compact was formally and frequently activated providing an opportunity for partnership members to identify, acknowledge, and celebrate progress. Representing a safe relational space where CEOs were able to be honest and open about their progress, the monthly TGB also produced powerful social levers (such as friendship, peer-support, and togetherness) that curbed opportunistic behaviours that could undermine the partnership relationship.

How a Face-To-Face Monthly Meeting Provided a Mechanism for Managing Conflict

Planned and formal 'reflections on the compact' were not the only way partnership members would trigger attention to the promises set out in the compact. We observed how members of the regulator, and the hospital CEOs would deliberately reference the compact to 'call-out' incidents where reciprocal promises were not being upheld. Calling attention to such incidents via the forum of the monthly meeting presented an opportunity to discuss the incident, facilitate time-sensitive conflict resolution, and to safeguard the trust established among partnership members. For example, observations of the TGB in 2018 and 2019 recorded numerous instances of the regulator using the phrase "*holding up the mirror*". The intention was to assure the CEOs of a continuous self-examination of regulatory behaviours to align with the promises of the compact in pursuit of relational change. To illustrate, when a regulatory department had prevented one of the CEOs from attending a partnership meeting due to concerns over their accident and emergency performance, the regulator called themselves out: "*we need to get better at socializing the compact, ensuring all parts of the regulator uphold the agreed ways of working*" (Regulator G, observation diary). Calling attention to one's own breach enabled the traditionally more powerful regulator to demonstrate humility when things went wrong, subsequently reinforcing their continued commitment to '*creating the right environment*' (aligned to the compact). Other times we observed the CEOs calling out a breach to the compact during the monthly meeting. For example, the CEOs collectively 'called out' the regulator for not upholding a 'leadership' promise when they “poached” [sic] a senior manager from one of the five partner hospitals, thereby depleting the leadership team in one organization to bolster the capability of another. The regulator representatives had not foreseen this recruitment tactic would be perceived as a breach, but the compact presented a mechanism for the CEOs to call attention to the unwanted and unhelpful behaviour. In sum, calling out a breach triggered collective discussion among partnership members facilitating time-sensitive conflict resolution, reinforcing the goals of the partnership.

Relational Change Is a Process

The English NHS is a large, complex, and highly regulated context where things can go very wrong, very quickly. In 2018 one of the five hospitals was placed in ‘special measures’ by the hospital inspector. The CEO had taken six months of leave due to sickness, during which time the organization’s financial troubles were attracting attention from other parts of the regulator. Subsequently, a high level of scrutiny from both the regulator and the media engulfed the organization, culminating in the sudden departure of the CEO, and testing the resilience of the partnership.

For the regulator, it was not always possible (or desirable) to uphold promises set out in the compact, particularly if partners have been judged as failing by another regulatory arm (in this case the hospital inspector, Care Quality Commission). While the incident directly contravened several aspects of the explicit promises set out in the compact (e.g. creating the right environment, listening, communicating, influencing, and leadership), the TGB was the forum in which the regulator sought to make sense of the incident and reinstate trust in the partnership and its commitment to the partnership’s shared goals. We observed how the most senior representative of the regulator appeared skilful at demonstrating humility while steering the group towards collective reflection and a shared responsibility. For example, having acknowledged that all members of the partnership should have realized that the affected CEO was struggling the regulator asked: ‘*why did no-one call [breach] out?*’ and ‘*why didn’t we do anything?*’, and ‘*what could we have done better*’ (Regulator K, observational diary). The discussion concluded the incident was ‘*a reminder of how far we [as a partnership] need to go*’ (Regulator G, observational diary). In this way, the partnership recognized that new ways of working are aspirational, and that relational change is a process requiring sustained commitment despite “*bumps in the road*”.

Towards year four of the formal five-year partnership (and following a 3-month interruption due to COVID-19), we observed a dramatic shift in dialogue between regulator representatives and the CEOs. That the group of five CEOs were now seen as trusted members of an expert group was evidenced by the frequency with which regulator representatives were seeking the advice and approval from the five CEOs, via the TGB. On many occasions, the regulator would present their attempts to capture the lessons from the partnership and use the knowledge and experience to influence policy and practice across the wider system. This dramatic change in relational dynamic took time to achieve, but since it was agreed the monthly 'partnership' meeting would continue indefinitely, we contend the significant time investment had been worthwhile. In the next section, we discuss how and why the compact was effective for guiding this new type of relationship.

Implications for Practice

Fostering relational change between a regulator and a regulatee is a complex endeavour. Regulators must regulate, they must retain power to wield an axe when necessary and protect the public from potential harm (Ayres & Braithwaite, 1992). A regulator must also be responsive to context, employing relational mechanisms that build trust to foster a more collaborative approach to improvement that is sustainable over the long term (Braithwaite, 2011; McDermott et al., 2015; Warsen et al., 2019). Our empirical illustration demonstrates the role of a compact in both formalizing and operationalizing the expected behaviours of collaborating organizations where new partnership ways of working are required. In practice, the compact acted as a 'hierarchy-light' management practice that fostered a shared sense of accountability among partner organizations, and a clear and constant focus upon shared partnership goals (Kelman et al., 2013). Unlike an implicit psychological contract, where individuals only become aware of the terms and conditions of an exchange relationship when expectations are not met (i.e. when trust in the relationship is damaged), a compact makes explicit an agreed set of reciprocal promises that partnership organizations and their representatives can reference to ensure the partnership stays on track.

Reflecting recommendations from the literature our empirical example exemplified many of the attributes of successful partnership. For example, the monthly partnership meeting fostered regular face-to-face dialogue and a shared sense of identity (Ansell & Gash, 2008; Hardy & Phillips, 1998; Williamson, 1989); the predictable (repetitive) pattern of activity was important for producing social norms that curbed self-serving behaviour and promoted the exchange of tacit knowledge for customized knowledge exchange (Ansell & Gash, 2008; Jones et al., 1997; Kelman et al., 2013; Perkins et al., 2020; Williamson, 1989). In sum, the monthly meeting of the TGB presented a safe relational space where trust could be established, and conflict could be managed in a time-sensitive manner (Warsen et al., 2019). Further, the monthly meeting presents a safe relational space isolating stakeholders from the competing tensions and priorities of the external context (Dickinson & Glasby, 2010; Hartley & Rashman, 2018).

The leadership compact itself not only represented reciprocal promises of the partners, it also clearly stated the shared partnership vision. Regular and formal 'reflections on the compact' presented the opportunity to monitor and appraise progress (or otherwise) towards the shared vision and goals, subsequently reinforcing the partnership's commitment to building bottom-up capacity for improvement crucial for ensuring the highest possible quality of care at the lowest possible cost.

We contend the compact represents a 'hierarchy-light' management practice (Kelman et al., 2013) that effectively managed the transition towards partnership working while retaining a focus on accountability. Embedded within an established inter-organizational meeting routine, the compact became a mechanism for reflecting on the progress made towards the shared partnership vision. Within a safe relational space, this regular and predictable action triggered positively valenced reflections creating a regular air of celebration that reinforced the commitment to new ways of working. In sum, the routine action of 'reflecting on the compact' at every monthly meeting enabled trust to be built and sustained among partners. Further, the ability to manage conflict was facilitated by 'calling out' incidents where behaviours of one or more partners had not lived up to the promises made explicit in the compact. Subsequently, partnership members would seek to understand why the breach occurred, what they can learn from it, and whether they need to renegotiate aspects of the compact.

Implicit in our findings is the creation of new shared knowledge through stakeholders working effectively in partnership. The decision to continue the monthly partnership 'indefinitely' after the five years of working together is testament to the value attributed to the meeting. In line with Leach et al. (2014), we see learning as a tangible outcome of partnership, where open and honest sharing of knowledge and experience "paves the way for collective action with constructive results such as new policy implementation" (p. 594), and that new policy implementation has the potential to foster a culture of continuous improvement across the wider healthcare system.

We conclude with a summary of observations for successful partnership between healthcare organizations:

- First, we highlight the importance of trust for all effective relationships.
- Second, the creation of a safe relational space, where individuals can be vulnerable without fear of reprisal, is instrumental to building trust. Without trust, partnership fails.
- Third, we highlight the time commitment necessary for building trust. The monthly meeting described in this chapter was face to face and took place across most of the day. Despite this, both members of the regulator and each of the five CEOs would proclaim the meeting '*the best day of the month*'. Hence, while time commitment can be difficult in a resource constrained context, it presents a highly valued opportunity to share learning and to foster and maintain collaborative relationships.
- Fourth, we highlight the role of a compact when used as a 'hierarchy-light' mechanism for managing and monitoring change. Once a common purpose (shared goals and vision) is agreed, the development and monitoring of an explicit set of reciprocal promises are vital to guide and maintain an effective partnership.
- Fifth, the compact acts as a 'north star', reminding stakeholders of their purpose and the reciprocal promises agreed. This was particularly critical when a partner experiences turbulence in their operating context.
- Finally, we highlight the importance of activating the compact on a regular (routine) basis so that partners are reminded of the common purpose and are held accountable for their contributions aligned to the promises set out in the compact. We identify two ways the compact can be activated: first is to allocate time to reflect on progress towards shared partnership goals and celebrate successes; second is to foster a safe relational space within which a breach of the compact can be 'called out'. When a participant calls attention to

a breach within a safe relational space, an opportunity for reflection, sensemaking, and learning can resolve conflict in a time-sensitive manner. This process can serve to repair trust among stakeholders, reaffirm the common purpose and a continued commitment to it. Alternatively, a change in circumstances may require stakeholders to renegotiate the terms and conditions of the compact.

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CHAPTER 4

Micro-Clinical Cultures, Group Mindlines, and Evidence-Based Practice

Amy Grove

Introduction

Despite more than 30 years of research exploring evidence-based practice (EBP), the evidence-to-practice gap remains a problem in healthcare. Significant new evidence and knowledge are created, only some of it is shared, and even less of it is used when delivering care to patients. EBP is important for sustainable healthcare. We need to be able to provide safe, effective, and cost-effective care to patients now and into the future. Yet routes to EBP are wide and varied, and for various reasons, healthcare providers may not always choose the most clinically or cost-effective treatments.

We can examine routes to EBP in and across healthcare organisations such as hospitals, or in the micro-level groups of professionals working within them. At the macro-level, numerous groups are responsible

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for disseminating scientific evidence, including policymakers, academics working in Higher Education, and third sector organisations, such as health and social care charities. Understanding what happens to this evidence when it reaches the meso and micro levels of healthcare provision allows us to study the evidence-to-practice gap in different contexts.

In this chapter, we hypothesise that the problem of moving evidence into practice is a consequence of the micro-clinical cultures evident in different healthcare contexts (Grove et al., 2020a, b; Mannion & Davies, 2018). However, what are clinical cultures and why are they so important for EBP? We define micro-clinical cultures as the shared ways of thinking, feeling, and behaving within a clinical group, such as a group of surgeons. Micro-clinical cultures can act as a theoretical thread which enables us to study EBP and show how healthcare professionals differentially shape the sharing and use of evidence within their departments and hospitals. This variation in the sharing and use of evidence produces variation in both patient and organisational outcomes and may impact negatively on sustainable healthcare. Throughout this chapter, we show how increased insight into micro-clinical cultures may help to mediate the problem of variation in EBP.

The Moral and Financial Imperatives of EBP

The evidence-to-practice gap characterises both the moral and financial imperatives outlined in the introduction of this book. The moral perspective is clear, discrepancies in best practice recommendations generate inequity, inequality, and negative health outcomes for patients (Grimshaw et al., 2012; Russell et al., 2013). Using the treatment of carpal tunnel syndrome as an example, we find that recommendations for surgical treatment are highly variable. Some regions in the UK implement stricter referral criteria than others. So, patients in these areas have to reach higher thresholds of symptoms before surgery is offered to them (Ryan et al., 2017; Moorhouse & Giddins, 2018).

The financial imperative of EBP is less obvious. It is assumed that healthcare organisations should invest in evidence-based interventions and disinvest in those which that do not show a clinical benefit, or at times are harmful to patients (Chambers et al., 2017). However, the causal association between EBP and cost savings is not certain. Reports detail the added cost of following best practice recommendations, for instance, when additional treatments and diagnostic interventions may cost more to deliver

(Bowser et al., 2021). Consequently, service providers need to balance expenditure and patient outcomes to sustain services in the future.

Spend on healthcare can occupy a great deal of policy attention when the sustainability of healthcare is discussed. Beyond the increasing service delivery costs, we must consider the large sums allocated to the conduct and dissemination of scientific research. In the UK, a large proportion of scientific evidence stems from research funded through the research arm of the National Health Service (NHS), the National Institute for Healthcare Research (NIHR) (NIHR Evidence, 2020). The NIHR research programmes budget totalled £317 million in 2018/2019 (NIHR 2019). When we add the cost of research dissemination and clinical guideline production (~£70 m per year 2019/20), we are heading towards an annual budget of nearly £400 m (NICE, 2020). Demonstrating a return on this investment in the context of sustainability is complex and challenging. Research funders need to be able identify and prioritise 'big ticket' impact of the research they commission but return needs to reflect improvements in the health and well-being of patients where causal inference is indirect.

What is important in terms of both the moral and financial imperative, is how to achieve uptake from scientific evidence so that quality of care and improvements in health and well-being of patients are embedded and sustained in practice. This is where the study of EBP continues to be valuable. However, this research must be done whilst taking account of variation in the sharing and use of evidence and working with, not against, micro-clinical cultures.

Evidence-Based Practice and the NHS

Evidence-based practice developed from evidence-based medicine (EBM) was introduced into medical literature in the 1990s (Guyatt, 1991). The most used definition suggests that EBP is "*the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients*" (Sackett, 1996). The transition from EBM towards EBP reflects the need to broaden beyond the medical model of healthcare as well as to integrate the best scientific evidence, individual clinical expertise, and patient choice. However, for each patient choice and for every clinical decision, the relative contribution of each type of evidence (e.g. scientific, clinical expertise, patient choice) may vary considerably. There is much debate in the literature about what EBP really is, what it should be, and whether the traditional model needs to be updated to make it useable.

In UK healthcare services, there is prominent support for EBP to provide safe, effective, and high-quality care (Grimshaw & Russell, 1993; Haynes et al., 2002). The organisation responsible for producing clinical guidelines and guidance recommendations is the National Institute for Health and Care Excellence (NICE) which has produced more than 1600 pieces of guidance since its inception (NICE, 2021). The assumption is that the evidence contained in these recommendations can improve outcomes for people using the NHS in a way that is cost-effective and therefore, sustainable for the future. Yet, the academic and practice communities have shown that evidence production does not always translate into action in practice.

Literature in the field of Implementation Science and Knowledge Mobilisation is vast (Buchanan et al., 2013; Clarke et al., 2010; Goodacre, 2008; Marincowitz et al., 2019). We identified >184,000 articles in a recent search (Medline 31 March 21) which specifically set out to improve routine care by promoting the systematic uptake of research into practice (Eccles & Mittman, 2006). Studies have used a variety of research methods to explore EBP or understand how we can improve EBP implementation and intervention development (Pawson, 2019). However, systematic reviews of literature across multiple disciplines (Fitzgerald et al., 2014; Flodgren et al., 2016; Francke et al., 2008; Grove et al., 2016) and numerous empirical studies within clinical specialities (Grol, 2001; Grol & Grimshaw, 2003; Grove et al., 2018; Lowson et al., 2015; Platt et al., 2015; RCP, 2015; Sheldon et al., 2004; Weng et al., 2013) report the limitations of evidence-based guideline uptake.

The resounding message from the academic literature suggests that the impact of EBP on patient outcomes remains intangible and inconsistent. Authors have suggested that this may be a consequence of the highly contested nature of scientific evidence in the NHS, which requires negotiation and legitimation (Gkeredakis et al., 2011; Grove et al., 2018; Walshe & Rundall, 2001). Tensions arise when meso-level organisations, such as NICE, and the micro-level clinical cultures (i.e. professionals) fail to reach a consensus on the best treatments and how they should be implemented in practice (Gkeredakis et al., 2011). Characterisations of best practice are so often socially constructed and grounded on the individual clinicians', or professional group's understanding and interpretation of the evidence, that 'standardisation' of practice via EBP seems an insurmountable task (Grove et al., 2020a).

This leads us on then to explore the impact of the individual and group level, (i.e. the micro-clinical cultures'), enactment of EBP. To ensure that patients benefit from scientific advances in effective and safe care, we need to adopt a wider consideration of what constitutes more contextually and culturally appropriate evidence, and what methods and mechanisms are appropriate for encouraging evidence uptake.

In the next section, we provide practical illustrations drawn from our empirical studies to demonstrate how micro-clinical cultures work to generate definitions of EBP which go beyond scientific evidence and change (for better and worse) how practice is delivered. The arguments presented stem from a four-year piece of research conducted between 2013 and 2017 which examined the contextually and culturally varied implementation of EBP for hip replacement surgery across individual surgeons, professional surgical groups, and multiple hospitals (Grove et al., 2015).

The Context of NHS Orthopaedic Surgery

Hip replacement surgery, whilst expensive, is the optimal intervention for most people with advanced arthritis of the hip joint (Clarke et al., 2015). It is a clinically and cost-effective treatment (Clarke et al., 2015) (at a willingness to pay threshold of £20,000 per quality-adjusted-life-year [Pulikottil-Jacob et al., 2015]) which is offered to patients with arthritis when alternative treatments, such as lifestyle changes and pain relief medications, are unsuccessful. The requirement for hip replacement is increasing as our population ages and younger people seek earlier treatment. The increased demand for surgery has a detrimental impact upon already limited NHS resources and the sustainability of musculoskeletal services as we face financial challenges in providing treatments to patients in need.

At the time our research was commissioned, three contextual challenges impacted on the delivery of hip replacement surgery in the NHS. The first reflects the financial challenges facing orthopaedic services due to increased demand for treatment. In 2019, approximately 100,000 primary hip replacement operations were performed in the NHS, costing approximately £1bn (NJR, 2019) not including the intensive pre- and post-operation physiotherapy and medical management outside of the operation. The second challenge reflects the steady growth in public media coverage around hip replacement surgery. This includes the publication of surgeon performance data and increasing controversy surrounding hip implants that had to be recalled (Costa, 2012; Smith et al., 2012a, 2012b). During 2013, when our study began, medico-legal litigation cases were emerging rapidly in the NHS. Reports suggest that the growing incidence of litigation in orthopaedics costs upward of £30 million per annum (Briggs, 2015). An analysis of the causes of litigation indicates that most are avoidable (Briggs, 2015) which strengthens the case for surgeons to follow EBP.

The third challenge was the dissemination of a new piece of hip replacement guidance to all NHS organisations in England and Wales. To ensure healthcare services offer effective, safe, and cost-effective treatments for patients, NICE, via the NIHR, commissioned a review of the existing clinical and cost-effectiveness guidance governing hip replacement surgery (Clarke et al., 2015). This work was undertaken by our Technology Appraisal Review team at The University of Warwick. The resultant clinical guidance was published by NICE in 2014 (NICE, 2014). Our research was ideally timed and placed to examine the implementation of this guidance which clinicians were expected to use in practice.

Over the resulting four years, we collected and analysed data to generate three case studies of evidence-based orthopaedic practice. What emerged was an empirically rich depiction of the impact of micro-clinical cultures on EBP. We found that at the clinical group level (the self-defined group of surgeons working in a hospital), group identification and membership engendered a divergence from the evidence contained in clinical guidelines. Instead, surgeons orientated their practice towards what Gabbay and LeMay have previously described as ‘clinical mindlines’ (Gabbay & LeMay, 2004, 2011). (More about mindlines later in the Chapter). The surgeons’ practice reflected group mindlines, which were the cumulation of individual mindlines grounded in micro-culture, the experiential and context-specific knowledge of surgery in their hospital. Our follow-on five-year study which commenced in 2019 (reference NIHR AF-300060) seeks to understand how we can harness the power of the group mindlines operating within micro-clinical cultures to engender distributed clinical leadership to improve EBP (Grove et al., 2020b). Our empirical findings and the preliminary interpretations are described in the next section alongside our theoretical considerations of how micro-clinical cultures enable us to understand how the evidence-to-practice gap is sustained—and more importantly, how it can be minimised.

Evidence Hierarchies in Orthopaedic Surgery

In our case studies, we sought to identify where, when, and how evidence and knowledge were used in surgical decision-making. We first undertook a systematic review of published literature to help inform our in-depth exploration of real-world practice. Our review summarised the secondary literature and identified eight sources of evidence which were used in orthopaedic decision-making (Grove et al., 2016). We organised these evidence sources into a framework according to their target unit of analysis (see Table 4.1, column one). The findings indicated that formal codified knowledge, such as that in clinical guidelines, appears to play a small part in orthopaedic decision-making. More prominent drivers of practice included how medical professionals are socialised in the context of practice and the importance of micro-cultures at play. Patient candidacy for hip replacement appeared not to, in itself, account for the reported differences in practice.

We used this initial framework to guide and progressively focus our primary fieldwork. We aimed to identify how the evidence sources were used in practice, to understand their relative importance in relation to each other and whether additional sources of evidence were overlooked. Primary data included 64 interviews with surgeons and NHS staff, embedded observations of day-to-day practice and the collection of 121 supplementary documents. We analysed the data thematically and conducted a cross-case comparison to look for differences and similarities between the three cases (Grove et al., 2018, 2020a). Our findings extended our initial eight evidence sources and enabled us to construct a *surgical hierarchy of evidence* which was organised across three themes (described in Table 4.1).

This work represents the real-world practice of orthopaedics in the NHS where the surgical hierarchy of evidence, i.e. what is or should be considered important for surgical practice, was flexible and context dependent. This contrasts the traditional hierarchy of evidence which is fixed and foundational to clinical guideline development (Grove et al., 2020a). We found that the evidence promoted through healthcare policy could never fit the needs of micro-clinical cultures, and therefore, had limited

Table 4.1 Surgical hierarchy of evidence generated from primary and secondary research findings

	Secondary research summary findings (8 evidence sources)	*Primary research summary findings (3 themes)*	*Theme description*
Micro evidence	Informal experiential knowledge Training and formal education Individual patients' and surgeons' factors	Individual Beliefs, Perceptions, and Values of Orthopaedic Practice	Illustrate issues related to personal circumstance, professional identity, and characteristic behaviour. Important in this theme were the knowledge, method of learning and understanding of surgeons about sources of evidence and their influence and importance for individual practise
Meso evidence	Managerial knowledge Organisational knowledge Socialisation and association with colleagues	Orthopaedic Communities of Practice and the Knowledge, Capacity, and Contingency in Organizations	Represent the networks and communities to which groups of surgical professionals belong. This was particularly important for evidence sharing between individuals (was the professional norms of this group of clinicians) and across organisations (operational issues related to the hospital as a functioning business, such as financial status and pressure, staffing, service planning, and processes)
Macro evidence	Formal codified knowledge Culture, norms, and political influence of the sector	The Influence of the Regulatory Environment	Reflects knowledge and evidence which acts upon the NHS and healthcare as a wider system. It included the top-down influences which positively or negatively impacted on individuals, groups, and organisations attempting to deliver orthopaedic services in England, such as medical regulation, safety mandates and professional standards

value in standardising the practice of hip replacement surgery. Ultimately, we discovered that the processes by which scientific evidence was used or not, depended on the nature and formalisation of micro-clinical cultures which were heavily informed by professionally socialised definitions of what evidence is important and when.

In the next section, we will describe how clinical cultures influence the use of clinical guidelines and EBP. Specifically, we aim to discuss how micro-clinical cultures facilitate divergence and variation from EBP. We reflect on the importance of experiential, collectively constructed micro-cultures which seek to orientate clinicians (in our case surgeons) towards greater use of group mindlines. We conclude by summarising the implications that micro-clinical cultures may have on the sustainability of EBP and indirectly on healthcare outcomes for people using healthcare services.

Micro-Clinical Cultures and Orthopaedic Surgery

Micro-cultures represent a particular type of professional group whose behaviour, performance, and decision-making are driven by many factors, including professional identity, beliefs and values, and role status. In the healthcare sector, many micro-cultures exist with varied behavioural norms and ways of working. Micro-cultures may develop between professional types, e.g. clinicians and managers, between clinical roles such as medics and nurses, and across clinical disciplines, e.g. orthopaedic or cardiovascular surgeons. In our study, surgeons tended to segment themselves further by the area of the body they worked, for example foot surgeons or hand surgeons. This is generated within sub-speciality micro-clinical cultures. As we progress through sub-cultures, we see increasing specialisation of knowledge and skill, a narrowing of the opportunities for cultural membership and a restriction in the ways that evidence can be drawn in to be used in practice. However, it is not just orthopaedic surgery which is fractured by specialities, professional groups, and hierarchies (Mannion & Davies, 2018). Micro-clinical cultures are sub-divided throughout healthcare, and this is most noticeable when cultures have to compete for resources and status (see example later regarding ring-fenced beds) (Powell & Davies, 2012).

In our research, we found a strong influence of local micro-clinical culture and group membership which drove surgeons to diverge from EBP. Surgeons orientated themselves towards greater use of professional norms based on their experiential and tacit group knowledge. These professional norms appeared to develop when professionals working in the same occupation shared specialised knowledge. Norms acted as a 'code of conduct' to standardise the behaviour and practice of the surgeons to ensure conduct deemed acceptable to others in the group. One surgeon we interviewed described how they learned to act in accordance with their group, because *"you [are] heavily influenced by your peers, your practice becomes less novel and your behaviour becomes, you know, more standardised"*. Group norms were usually implicit to group members, and we found that new consultant surgeons (attending physicians) entering the group appeared initially to find it difficult to understand and conform to these implicit norms. This transition process from trainee to senior surgeon was challenging. Surgeons reported a need to discover what the group norms were, and then learn how to comply appropriately to the micro-clinical culture operating in that context.

We observed how deviation from the established group norms appeared to result in both covert and overt disapproval by other colleagues. For example, in one hospital, we found disagreement about practice norms regarding which hip implant to select for a particular patient group. This appeared to lead to conflict and further separation within the micro-clinical culture. When asked why they could not use the same type of implant, surgeons stated that "*we're not using that*" and that "*theirs is junk kit, there is no junk kit here*". This separation generated two distinct micro-clinical cultures who appeared to possess divergent group norms and beliefs regarding treatment and implant selection decisions. In meetings, surgeons from opposing micro-clinical cultures struggled to agree on which hip implant to use, even though they worked in the same department, organisation and presumably shared the same organisational culture. Both groups appeared unable and unwilling to select the implants that the opposite group used, consideration of the best evidence to support implant selection was lacking. Decisions seemed purely to relate to their beliefs about having to perform surgery with an implant that was not their established preferred norm within their group. In this context, the evidence-base to support the selection and use of the hip implants was largely irrelevant.

There is a growing body of literature which links micro-clinical culture to healthcare quality. However, the implied simplistic descriptions of a potential causal chain between mechanisms and outcomes, lack sufficient depth and specificity to enable others to pick them up and use them in another context to enact change (Coles et al., 2020; Mannion & Davies, 2018). Part of the problem is the intangible nature of micro-clinical culture contexts. They represent the hidden aspects of clinical practice which manifest themselves in the patterns and dynamics of care. Our study of orthopaedics demonstrated that it is difficult to identify and quantify micro-clinical cultures—let alone standardise them via EBP. The study of micro-culture in context only ever represents a snapshot of a fluid and ever-changing situation, where mechanisms triggering outcomes are not stable. The positioning of an evidence source in surgical hierarchy of evidence could and would change often. There was no consistent gold standard governing surgical practice. What was needed was a more nuanced and sophisticated understanding of cultural dynamics and the impact that they have on EBP. To do this we needed to ask deeper questions; What do micro-clinical cultures look like in healthcare? How do micro-clinical cultures relate to and influence EBP, quality, performance, and sustainability? And can changing micro-clinical cultures generate improvements for patients and healthcare services?

Differing Levels of Culture

To quantify and examine culture, academics have categorised the components of culture into distinct levels which aim to describe the increasingly abstract mechanisms of micro-clinical cultures (Schien, 1985; Mannion & Davies, 2016). These levels comprise (i) visible manifestations, (ii) shared ways of thinking, and (iii) deeper shared assumptions.

Visible manifestations depict the most concrete distinguishing components between the micro-cultures we find in healthcare. An obvious example we found was the demarcation between physicians and surgeons in the physical layout and functioning of the hospitals. The 'back office' activities of surgical theatres and pre-operative rooms were often hidden, protected, and absent from the public facing medical wards and managerial spaces. The hospital managers talked about the surgical spaces (e.g. theatres) as only accessible to surgeons. One described occasions where they would change into scrubs to be able to walk around unnoticed. This visual and spatial separation created a boundary between the surgeons, physicians, and managers which helped solidify the differences between the surgeons' micro-clinical culture and their organisational context.

Shared ways of thinking is one step removed from visual manifestations. They represent the values and beliefs used by members of a micro-culture to justify and sustain the visible manifestations. We found shared ways of thinking were rationales used by surgical groups to explain or justify why things need to be done differently in their context. The commonly accepted parlance was that surgery is different, and EBP does not fit the immediate needs of surgeons, one surgeon explained: *"whereas a physician might sit back and think about a problem in the coffee room and deliberate, our job isn't like that. It's immediacy, you need to have an immediate decision"*.

Finally, *deeper shared assumptions* depict the largely unconscious justification of practice that cannot be verbalised by members of the micro-culture. A prominent example is the presence of the professional clinical hierarchy and the assumptions about the relative power that elite professions, such as surgeons, hold in healthcare (Greenberg & Greenberg, 2020; Lin et al., 2020). Shared assumptions about how the clinical hierarchy works are formed early in clinical careers and reinforced through the hidden curriculum in medical school and medical training (Hafferty, 1998). Deeper shared assumptions appear entrenched in practice and may be less responsive to change. They are continually reinforced via professional interactions held by all professional disciplines (e.g. clinicians, managers, policymakers) responsible for the sustainability of healthcare services (Lempp & Seale, 2004).

MICRO-CLINICAL CULTURES INFLUENCE ON EBP

We observed that established micro-clinical cultures in orthopaedic surgery have profited from all three distinct levels of culture. Surgeons have gained status and autonomy to self-define the visible manifestations of surgery. As a professional group, surgeons have developed shared ways of thinking and deeper shared assumptions which have generated their own and others' stereotypical assumptions regarding the typical orthopaedic surgeon and their clichéd behaviour. We found that these stereotypical assumptions and behaviour patterns could be categorised and were predictive of surgeons' approaches to EBP. Enabling them to sustain patterns of clinical practice which did not always align to recommended guidelines (Grove et al., 2021). We demonstrated the importance of gaining a sophisticated and nuanced understanding of the social dynamics of surgery, the shared ways of thinking, and deeper shared assumptions within micro-clinical cultures that underpin and reinforce practice and how EBP is enacted in practice.

Our analysis helps to justify why certain evidence-to-practice gaps are sustained. We found the 'context neutral' approach to EBP is counterintuitive to the contextually dependent and varied micro-clinical cultures in healthcare practice. When asked to describe their micro-clinical culture, one group of surgeons said, "*this is just what the hip folks do*" therefore, practice was intuitive not planned. We identified differences in requirements for entry to groups, and flexibility in where the established micro-clinical culture boundaries lay, for example, differences between small consultant groups (distinct clinical culture 1), wider groups constituting all the surgeons in a hospital orthopaedic department (distinct clinical culture 2) and the larger orthopaedic groups which at times encompassed members of professional societies (distinct clinical culture 3). Although these cultures were distinct, each was embedded within the next.

We found that local networks and smaller groups (distinct clinical culture 1) appeared to have the most autonomy over their practice and therefore, contributed largely to sustaining the evidence-to-practice gap. In clinical culture 1, the consultant group represented the shared ways of thinking, feeling, and behaving, boundaries were flexible, and entry was intangible and defined by the existing surgeons themselves. For example, the two distinct micro-clinical cultures which developed due to disagreements regarding hip implant selection diverged and worked in parallel rather than compromising to function as one micro-clinical culture. The second and third level clinical cultures differed, as entry was defined externally by another organisation—i.e. how many consultant positions are available in the hospital—and nationally, by nationwide availability of surgical training posts, therefore power resided elsewhere. In clinical cultures two and three, the authority over membership existed elsewhere, often under the control of hospital executive boards (meso-cultures) or national committees (macro-cultures).

In our study what was most important for developing and maintaining micro-clinical cultures in context was the level of autonomy the group members appeared to have to control entry, membership, boundaries, and behaviours (Grove et al., 2020a). These contextually defined micro-clinical cultures seemed able to influence both the practice of individual surgeons and how decisions about EBP were made across the hospital organisation. Our case studies revealed distinct styles of orthopaedic practice which represented the ways in which varied types of evidence were used in practice. The norms and standards of the group defined what behaviour and decisions (evidence-based or not) were acceptable practice and allowed for exceptions or deviation from the organisational standards and guidelines in the orthopaedic speciality.

The Need to Understand Both Perspective and Context

We have acknowledged through our work that micro-clinical cultures are important for increasing insight into EBP and therefore, may help to mediate the problem of variation in EBP. However, it is important to describe how micro-clinical cultures can at times be shaped externally, for instance by the macro-level impacts described in Table 4.1. An example of this which occurred during our study was the introduction of venous thromboembolism guidelines (VTE) for reducing the risk of hospital-acquired deep vein thrombosis in orthopaedic surgery (NICE, 2018). VTE prophylaxis methods are divided into mechanical and pharmacological. Mechanical includes interventions, such as compression stockings, whereas pharmacological can include aspirin, unfractionated heparin, and low molecular weight heparin (LMWH) amongst others. When they were released in 2018, the guideline recommendations surrounding VTE generated divergent opinions and controversy within the orthopaedic community regarding how recommendations should be implemented and which treatment is considered best.

There is no universal recommendation for VTE but, in the UK, NICE guidelines were produced and it is expected that every surgeon and hospital should have an evidence-based protocol to ensure use of LMWH (Bircher & Chowdhury, 2020; NICE, 2018). During our fieldwork, we found that surgeons remain sceptical about the VTE options, and disagreement arose within micro-clinical cultures, as to whether they should use LMWH in their practice. Some did use it and others didn't, and this decision appeared to be made within the micro-clinical cultures. On this occasion, the evidence-based recommendation went part way to generating a change in the practice of some clinicians but across the micro-clinical cultures there was variation. Surgeons locally were able to maintain their work routines and beliefs about which approach to VTE is more appropriate for their speciality, thereby reinstating their autonomy over their practice. Ultimately, the micro-clinical culture enacted in their department and hospitals defined what type of VTE the patient received.

In this example, micro-clinical cultures determine how practice is arranged and accomplished circumstantially, and how it is narrated and justified by those who are part of it. Gaining this sophisticated understanding of the social dynamics of surgery and the shared ways of thinking and deeper shared assumptions that underpin and reinforce practice is important to understanding how EBP plays out in practice. The in-depth understanding gained from our empirical work helps to explain why certain evidence-to-practice gaps were sustained—as the 'context neutral' approach to EBP struggled to align with the contextually dependent micro-clinical cultures working across and within healthcare organisations.

Through our research, we have described how micro-clinical cultures are reinforced over time. Owing to their prominent position, orthopaedic surgeons were traditionally able to excel at articulating and enacting the values and practices which support their micro-clinical culture. Instances which seek to alter the status quo of practice, such as new evidence-based guidelines, can act to further reinforce the ways of thinking, feeling, and behaving of orthopaedic groups. This 'bedding in and bedding down' seems to strengthen the micro-clinical cultures' position towards EBP. Less helpful to the plight of EBP is that other meso- and macro-cultures (e.g. policymakers) can, given the right power and autonomy levers, actively work to undermine practice and generate change in orthopaedic micro-cultures. An example from our work was organisational mandates which limited the purchase of expensive hip implants in some hospitals. This mandate led to anger and discontentment within the micro-clinical cultures and between the micro-cultures and other professional disciplines working in healthcare. We found that this enforced, rather than collaborative approach to change, had negative consequences for the interprofessional relationship. This example illustrates how clinical cultures can stymie the collaborative work required for sustainable healthcare systems, where increasing numbers of patients will seek care for multi-morbidities therefore, necessitating collaboration across professional disciplines.

How to work with, rather than against, enduring micro-clinical cultures may be hard to discern, and depend on both the perspective of those involved and the context in which the cultures operate (Mannion & Davies, 2016). Perspective and context are important in whether positive change is made and sustained in healthcare. Yet, micro-clinical cultures can undermine change and limit EBP. We have shown that local group norms establish variation in the use of evidence, and this impacts EBP across a hospital and the orthopaedic community, for example, resistance to early reports of an increased incidence of adverse events associated with certain types of hip replacement (NJR, 2016; Nakano et al., 2017) meant that surgeons continued to use implants when evidence was suggesting otherwise (MHRA, 2017). Micro-clinical cultures may of course act as influential stimuli for innovation and improvement in orthopaedic surgery and move towards improved EBP. Surgeons are often innovators. The advancement of surgery is set against a backdrop of continuous development and surgical innovations which has transformed the way clinical care is delivered (RCS, 2019). Making sense of micro-clinical cultures is an essential part of any initiative which seeks to improve EBP in surgery, as clinical cultures can act as defenders of the status quo for the better or worse.

Using Clinical Culture Mindlines to Advance Evidence-Based Practice

In the final section of this chapter, we turn away from the practical illustrations drawn from our empirical studies to focus on how we can think about micro-clinical cultures and EBP more theoretically. To do this we go back to the work of Gabbay and LeMay. As described earlier, EBP and clinical guidelines only provide a small piece of the complex clinical decision-making process. Gabbay and LeMay (2004) were able to show how clinicians, in their case general practitioners (family physicians) rarely accessed, appraised, and used research evidence or other formal evidence sources. Instead, Gabbay and LeMay (2004) revealed how clinicians use *clinical mindlines* to inform their practice. Unlike guidelines, mindlines can be used to reflect the amalgamation of knowledge, experience, and evidence that exist in real-world decision-making. They defined mindlines as:

> Collectively reinforced, internalised tacit guidelines, which were informed by brief reading, but mainly by their interactions with each other and with opinion leaders, patients, and pharmaceutical representatives and by other sources of largely tacit knowledge that built on their early training and their own and their colleagues' experience. (Gabbay & Le May, 2004, p. 3)

Mindlines are an all-encompassing concept and demonstrate a more flexible, complex, and adaptable approach to EBP compared to clinical guidelines. They incorporate clinicians' multiple roles, values, past training and experience, organisational features of the practice, such as the nature and frequency of meetings, the practice ethos, and its financial and structural features (Gabbay & Le May, 2011). Since mindlines can include multiple sources of evidence, they reportedly give clinicians the capability to make decisions that encompass more than just technical and clinical elements of practice (Gabbay & Le May, 2011). Therefore, clinicians become more open to change and can generate new knowledge and continue to improve their performance by reflecting on their decisions and outcomes.

According to Gabbay and Le May (2011), mindlines develop in medical training but are continuously developed, amended, refined, and reinforced through a clinician's career in conjunction with their experience and contact with others. In our research, we depicted how group mindlines develop through the collective experience of micro-clinical cultures. We propose that micro-clinical cultures possess their own mindlines, which exist outside those of the individual surgeon, and act as an additional source of evidence which influences the practice of healthcare professionals. Group mindlines act as reinforced and embedded knowledge which allows clinicians in a micro-culture to function, by giving them a sense of who they are within context, what they need to do, and how all the potential sources of evidence fit into practice (Wieringa & Greenhalgh, 2015). The key point here is that micro-clinical cultures can default to group mindlines when their practice is questioned or challenged. We found that constant challenges from colleagues, and policymakers, enabled surgeons to establish knowledge boundaries around what is valued and considered evidence within the group. If needed, the micro-clinical cultures were able to renegotiate and change practice through changing their group mindlines. Consequently, change was easier to implement and welcomed by those involved.

The theoretical assumptions supporting clinical mindlines appear coherent and plausible. Yet their abstract description and challenging identification mean that they are difficult to articulate, to trace, target, or regulate, when we attempt to implement EBP for service improvement. However, those responsible for sustaining healthcare in the future do not have the time or resource to conduct in-depth empirical studies across all contexts and disciplines to ensure understanding of the group mindlines prior to making a change. Therefore, we have uncovered some general characteristics of intangible group mindlines which may be transferable across contexts:

- The micro-culture's construction and flexibility suggest that group mindlines should be viewed as complex social constructions: they are not right or wrong, good, or bad, they just develop organically.
- What came before is not replaced by the group mindlines, instead group mindlines become integrated into the standard practice of the micro-clinical cultures and they continue to evolve within context.
- The 'stickiness' of experiential evidence and the ease with which it is absorbed and accepted in micro-cultures means that bad ideas and non-EBP can spread. Corrupt mindlines can develop and take hold within a group in opposition to EBP.
- Mindlines are produced bottom-up by individuals embedded within micro-clinical cultures and are, therefore, flexible and acceptable in practice where context is contingent.

The bottom-up approach to mindline development implies that mindlines can better absorb local change and can be enabled or constrained by the local organisational demands and contexts. What is important for one micro-clinical culture at one point in time may not be relevant, or may even represent dangerous practice, to another. In this sense, micro-clinical cultures can create and sustain their own hierarchy of evidence which becomes fit for purpose in a way that top-down produced EBP and clinical guidelines never will. This is not to say that EBP should be rejected in favour of the old system of 'eminence-based practice' where we rely on clinical experience and expert opinion (Bhandari et al., 2004). This goes against the moral imperatives of EBP as described at the start of this chapter. As academics tasked with contributing to the production of clinical guidance, we are committed to ensuring the provision of safe, effective, cost-effective, and high-quality care for patients. However, we acknowledge that there is a negotiation process between excellence in surgery attained only by following EBP, and expert experience from those who have full understanding of local contexts, i.e. a full awareness of the micro-clinical cultures and group mindlines. We should appreciate that both are not infallible and need to be balanced to transform explicit scientific evidence into knowledge that is internalised as micro-clinical culture mindlines so that they are useful in the context of practice.

How we can achieve this is a question we are not yet able to answer. This is where the study of EBP is valuable, but this must be done whilst taking account of and working with, not against, micro-clinical cultures. Our work to date suggests that in the context of orthopaedic surgery, we need to focus on encouraging distributed clinical leadership for EBP from within the micro-clinical culture—where those in positions of eminence interact in a collective social process to engender and improve EBP from *inside*. This will provide, we believe, insight into how to achieve evidence uptake so that quality of care and improvements in health and well-being outcomes for patients are embedded and sustained in practice.

Implications for Practice

In this chapter, we have presented our empirical work in orthopaedic surgery and theoretical understandings to describe micro-clinical cultures and to show how they are nuanced and context dependent in the face of EBP. We have described how surgeons' implicit culture norms evolve in an ad hoc way through hidden training curriculums, observations, and shared experiences with colleagues. This process of professional acculturation makes it difficult for an outsider to understand the granularity and variety of knowledge that exists within micro-clinical cultures. The development of micro-culture group mindlines is a process acculturation which results in persistent attitudes, beliefs, and values that help healthcare professionals, such as surgeons, manage with uncertainty in their work. Consequently, the assumption from guideline producing organisations that clinical guidelines can be implemented in a 'one size fits all' approach appears to be wholly inappropriate to clinical situations. Even the home-grown organisational policies and mandates are difficult to consistently uphold in practice where autonomous micro-clinical cultures exist.

Reflecting on our example of macro-drivers of change in orthopaedic culture, the introduction of VTE guidelines resulted in change towards EBP which was enacted albeit locally nuanced, through the contextual micro-cultures. In VTE, macro-level evidence, in the form of clinical guidance, could, at least in part, shape the practice of micro-clinical cultures but illustrates how micro-clinical cultures can stymie collaborative work—for example across different surgical specialities—required for sustainable healthcare systems where increasing numbers of patients will seek care for multi-morbidities.

Those developing EBP, and the guidelines produced, make suggestions about ‘what works’ and ‘what does not work’ for patients being treated in the NHS. Yet, EBP forms part of a causal chain of moral and financial imperatives for clinicians. Most healthcare professionals do not set out to widen the evidence-to-practice gap or to provide unsafe and more costly care to patients. However, the premise that explicit scientific evidence will provide valid and reliable results which can be miraculously translated immediately into healthcare practice is flawed. Scientific evidence has to be considered and legitimised alongside implicit knowledge and experience and within the constraints and structures of healthcare systems, national professional organisations, and local micro-clinical cultures. Clinical cultures influence the sharing and use of clinical guidelines, as a vehicle for EBP, and work to inform sustainable clinical practice and improvements for patients will need to take account of the vital importance of these micro-clinical cultures with their group mindlines.

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CHAPTER 5

Patient and Public Involvement and Engagement (PPIE) for Enhancing Absorptive Capacity (ACAP) in Pursuit of High-Quality, Affordable and Equitable Healthcare

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INTRODUCTION

This chapter highlights the importance of patient and public involvement and engagement (PPIE) in service development for sustainable healthcare systems. Its value for sustainable healthcare lies mainly with the contextual knowledge patients and their carers bring in to inform decision-making

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about health service delivery. They are often self-educated about their conditions, have knowledge by experience of the care they previously received and are increasingly part of online communities with others who share their experiences. Patients suffering from co-morbidities related to long-term conditions may have a unique overview of the 'joins' in healthcare systems seeking to deliver integrated care across different care domains, which may be less visible to professionals within organisational silos. As a result, PPIE offers the opportunity for a distinct group of stakeholders to bring novel knowledge to bear upon service development, creating the potential to enhance patient outcomes. Alongside this, we suggest a democratic imperative for patients and carers to be involved in decisions about provision of public services, given they are tax-funded. High-quality, affordable and equitable healthcare requires that decision-making processes are inclusive, reflecting the political demands of organisational leaders, but also accommodating the needs of those in receipt of services (Croft et al., 2016; El Enany et al., 2013).

In this chapter, we discuss the role of PPIE as a 'co-ordination capability' that enhances the 'absorptive capacity (ACAP)' of a healthcare system to acquire and apply knowledge to develop, implement, sustain and scale up 'evidence-based' services (Currie et al., 2018). We emphasise that 'evidence-based' does not only refer to traditional evidence produced through clinical research, but also to more tacit forms of experiential knowledge held by doctors about their patient population, and the knowledge by experience that patients and their carers possess. These diverse forms of evidence need to be integrated to support the development of high-performing, sustainable healthcare systems.

We begin the chapter by outlining the role of PPIE in the English NHS, which has extensive formalised structures and policies in place to support the integration of patient and carers' unique perspectives into service (re)development. Following this, we introduce the concepts of ACAP and combinative capabilities, highlighting the crucial role of co-ordination capabilities, such as education, liaison roles and cross-functional interfaces, to enhance knowledge mobilisation in the pursuit of the development of sustainable healthcare systems. To support our argument for PPIE as a co-ordination capability, we draw on findings from a NIHR HS&DR funded research programme examining the ACAP of clinical commissioning groups (CCGs) (Currie et al., 2018). In doing so, we draw together practical implications for those involved in developing sustainable healthcare services by drawing on the often-overlooked potential of PPIE.

PPIE for Sustainable Healthcare Systems

Global healthcare policy is increasingly focused on the importance of PPIE for sustainable healthcare systems (Barnes, 1999; Church et al., 2002; DoH, 2010). Focusing on collaboration between professionals and the public, PPIE is framed as involvement in evaluating, designing and implementing public sector services (Bovaird, 2007; Nabatchi et al., 2017). The public, as end-users of services, involved in such collaborations are considered to be experts, contributing specific knowledge towards processes of decision-making (Alford, 1998).

Previous research has illustrated how effective PPIE can improve, or even lead, the design of a service, enhancing cost effectiveness and patient experience (Croft & Currie, 2020; Croft et al., 2016). However, the definition of PPIE in policy is vague, with little consensus over who should be involved in decision-making processes and what form that involvement should take. Problematically, a lack of consensus of terminology, and overlapping structures of involvement (Mockford et al., 2012), potentially undermine PPIE, limiting its potential benefit to the development of sustainable healthcare systems (Baggott, 2005).

One particular challenge for the translation of PPIE policy into practice is the enduring influence of professional and managerial hierarchies on the involvement, or exclusion, of those involved in decision-making processes (Litva et al., 2002; Rutter et al., 2004). This is due to the contested value of lay expertise (Collins & Evans, 2002). While PPIE should enable individuals to relay their experiential knowledge of illness and health services (Mazanderani et al., 2013), this is rarely played out in practice. Professionals will often disregard the opinion of public involvement representatives, positioning them as ‘lay patients’ (Martin & Finn, 2011) rather than ‘experience-based experts’ (Collins & Evans, 2002). Previous research has suggested that public involvement representatives should be seen as partners to develop a collaborative relationship in healthcare development (Coulter, 2011). Yet, there is concern that managerial control could dominate decision-making (Rutter et al., 2004), undermining the potential impact of PPIE on healthcare system development. Service-users are often noted as wielding the least influence over the design and delivery of health services (Beresford, 2019), if not rendered totally powerless (Williams et al., 2016, 2020).

Conversely, recent work has suggested that creating managerially defined structures through which involvement occurs may enhance the impact of PPIE as those involved construct their role as 'experts in laity' (El Enany et al., 2013; Martin, 2008). The English NHS, in particular, has been notably progressive in developing such structures. While the rest of this chapter considers arrangements specific to England, similar approaches to PPIE are seen globally in healthcare systems where provider, purchaser and consumer are separated (Barnes et al., 2003; Church et al., 2002).

Over the last decade, English NHS policy has increasingly advocated for PPIE through patient choice and shared decision-making at all levels of the healthcare system (DoH, 2010; NHS England, 2013). The focus on public involvement to create a more sustainable NHS was reflected in the introduction of Clinical Commissioning Groups (CCGs) in 2012 (DoH, 2011b). In comparison to previous commissioning structures, which were criticised for their limited, tokenistic engagement with the public (Callaghan & Wistow, 2006; Martin & Finn, 2011), CCGs have a central focus on the involvement of General Practitioners and service-users in commissioning decisions, supporting PPIE. In particular, CCGs were set up with new legal requirements that ensured they were engaging with PPIE at every stage of the decision-making process (DoH, 2011a).

However, Croft et al. (2016) note that, despite being subject to the same legal requirements, CCGs were able to manipulate the structures through which PPIE influenced decision-making processes. They identified how limited guidance on PPIE structures, and the ability of commissioning organisations to determine their own organisational processes (Hudson, 2014), resulted in variable influence of PPIE on commissioning decisions due to different forms of managerial control, either enhancing or limiting PPIE. In short, while English NHS healthcare organisations remain legally required to engage in PPIE, we cannot presume that PPIE acts to support a sustainable healthcare system, since the nature of PPIE is left open to multiple interpretations at a local level (Croft & Currie, 2020; Martin, 2008). This raises the question: how might we ensure PPIE acts to enhance the capacity of organisations to mobilise knowledge for service development and delivery to render a healthcare system sustainable?

PPIE as Co-Ordination Capability for Enhancing ACAP

To consider the capacity of knowledge mobilisation within a healthcare organisation, we draw on the concept of 'absorptive capacity' (ACAP). ACAP was initially theorised from a range of studies conducted in R&D departments of private sector organisations, but is increasingly applied to examine variations in organisational performance across healthcare systems (Berta et al., 2010; Crilly et al., 2010; Harvey et al., 2009). There are two interacting elements to absorptive capacity: (1) Potential Absorptive Capacity—the ability to acquire and assimilate knowledge; and (2) Realised Absorptive Capacity—the ability to put newly acquired knowledge into action within the organisation through transformation (the development and piloting of an intervention) and exploitation (scaling up of that intervention).

Zahra and George (2002) suggest the variance between potential and realised ACAP explains variance in organisational performance. As such, understanding how organisations can enhance the acquisition, assimilation, transformation and exploitation of knowledge is crucial for innovation and sustainable organisational development. However, the majority of theoretical research and policy interventions in healthcare systems focuses on enhancing knowledge acquisition, largely ignoring how to enhance assimilation, transformation and exploitation. This is problematic as there is little point acquiring vast amounts of knowledge (potential ACAP) if it is then not used to inform service development and delivery (realised ACAP).

Antecedents to the development of ACAP are theorised as 'combinative capabilities' of which there are three components: (1) systems, (2) socialisation and (3) co-ordination capabilities. Systems capabilities refer to formal knowledge mobilisation mechanisms, such as written policies, procedures and manuals designed to facilitate transfer of codified knowledge, but also to environmental incentives that shape priorities. Socialisation capabilities refer to cultural mechanisms that promote shared ideology and collective interpretations of reality within organisations. Co-ordination capabilities refer to lateral forms of communication such as education and training, job rotation, cross-functional interfaces and distinct liaison roles (Van Den Bosch et al., 1999).

Each of the combinative capabilities has a different impact on the development of ACAP. While systems and socialisation capabilities may initially create structures and organisational cultures which ostensibly support knowledge mobilisation (for example, through formalised reporting systems or collaborative teams and committee groups), over time they may have a limiting influence on ACAP as systems become too rigid and certain types of knowledge may be overlooked. Conversely, co-ordination capabilities are seen as mediating the limiting effect of systems and socialisation capabilities, thus enhancing ACAP. As such, policymakers and organisational managers wishing to promote knowledge mobilisation need to enhance the co-ordination capability of their organisation, such as: the development of learning relationships through establishing internal and external networks; staff development and training; appropriate leadership; organisational strategy; and participation in decision-making (Harvey et al., 2009; Hotho et al., 2012).

As noted above, within healthcare policy the role of PPIE in decision-making relating to service (re)design and development is advocated as a way to develop more sustainable healthcare systems. In this respect, PPIE has the potential to act as a co-ordination capability to enhance ACAP. However, extant research suggests that while PPIE knowledge may be acquired through formalised systems, that knowledge may then be marginalised and not appropriately integrated into service development, rendering PPIE somewhat tokenistic (Croft et al., 2016). In addition, knowledge acquired through PPIE may derive from a limited population, which often consists of individuals who are more articulate and experienced in matters of organisational management than others. As a result, more vulnerable or marginalised populations may still struggle to have their voice and experiences heard during service development processes (El Enany et al., 2013).

To summarise, while PPIE theoretically holds the potential to act as a co-ordination capability to enhance ACAP, we need to better understand the reality and limitations of PPIE in the pursuit of sustainable healthcare system development. We need to understand how PPIE influences potential ACAP in relation to how knowledge is acquired through PPIE and how that knowledge is assimilated alongside other forms of knowledge derived from research, managerial knowledge about costs and experiential knowledge of frontline professionals. We also need to understand how PPIE influences realised ACAP, in which the assimilated knowledge transforms service development and is subsequently exploited for scale up of service interventions deemed successful.

To further our understandings of PPIE as a co-ordination capability, we draw on examples of PPIE we identified through a NIHR HS&DR funded programme of research examining ACAP of CCG-led commissioning networks in England (Currie et al., 2018). For readers unfamiliar with the English NHS, CCGs were established in 2012 and commission most of the hospital and community NHS services in the local areas for which they are responsible. Commissioning involves deciding what services are needed for diverse local populations, and ensuring that they are provided. They are legally required to engage patients and the public in commissioning decisions, although as set out above, local arrangements may vary considerably. We draw on our findings from one CCG in particular, which we characterise as largely representative of PPIE across CCGs in England. In doing so, we empirically illustrate the influence of systems capabilities, in the form of formalised structures for involvement, and socialisation capabilities, in the form of organisational culture, on the role of PPIE as a co-ordination capability.

Systems Capabilities: Influencing PPIE Through Formalised Structures

While we acknowledge that PPIE can take place at different levels of the healthcare system, across the English NHS we find it largely embedded at the General Practitioner (GP) practice level. Patient participation groups are found within each GP practice, with members of those groups subsequently feeding information upwards to the CCG level to influence decision-making regarding the services being commissioned. PPIE is facilitated through systems capabilities in the form of organised structures, groups and forums to support acquisition of patient knowledge:

> When we were forming the CCG back in 2011–2012, we were very committed to doing public engagement as well as we could and we spent a lot of time thinking about how we might do that. And out of that came the idea that we ought to have a parallel organization of the health forum, which would be an open membership organization whose role was to engage with us and support us in planning and service redesign, but also to challenge us and bring to our attention issues that were causing concern for the population locally. That body has a committee which support its functioning, but we also support it with staff time and a budget for expenses and that's now got I believe somewhere in the region of 400

> members across our locality. Compared to the previous public engagement vehicles that the commissioning side of the NHS has had it's really quite impressive *(CCG Manager)*.

Formalised structures to support PPIE were largely welcomed by clinicians and managerial staff involved in commissioning who acknowledged the importance of providing a service which met local population needs:

> General practice has a responsibility to listen to what patients are saying and then feed that up to us (CCGs). There's a responsibility for us to listen and to hear what's being said and not just to take it and then not do anything with it. Our staff should not lose sight of why we're here in the GP practice or the CCG, to serve the patients. *(General Practice Manager)*

However, in our research we also heard that, while the system capabilities of formalised structures may be in place to support patient engagement, there was a danger that the knowledge acquired through PPIE was treated in a tokenistic way:

> We engaged clinicians in our decision-making but not our patient population. We got a little bit caught up with pretty limited patient representation on our decision-making groups and assuming "Well, we've done our engagement." *(CCG Manager)*

Therefore, while systems capabilities such as formalised structures for engagement held some potential to support PPIE as a co-ordination capability, there was also a danger that such structures could be manipulated to limit PPIE. In particular, we noted how PPIE representatives were often not engaged in discussions around commissioning services until later on in the decision-making cycle. As such, rather than acting as a structure through which meaningful engagement could be supported, the PPIE forums became an opportunity for dissemination, rather than knowledge acquisition:

> Some things are so far down the line that it's just about telling them. So, for example, 111 [a telephone-based triage intervention designed, amongst other aims, to divert unnecessary visits to hospital emergency departments] we never had an opportunity to involve patients and the public. It was a nationally agreed model, so from that perspective you'd be going out telling them about implementation and how it's working and how they

> can access it…There are other examples where probably we should have been better at getting patients involved right at the beginning and actually they've come in sort of half way along, so where the thinking has started to develop actually. So community hospitals, the way they were redesigning the beds probably we should have got them involved a little bit earlier than that. *(CCG Manager)*

However, members of the CCG often seemed aware of how such structures could limit the benefits of meaningfully acquiring PPIE knowledge, and often discussed other situations in which acquisition of PPIE knowledge at the start of a commissioning decision was subsequently assimilated, transformed and exploited:

> Sometimes they're involved right at the beginning before even the proposals are put into place. They'll say "This is the issue. This is the problem. These are our challenges. How do we get on?" … But our ambition now is to include them at the beginning of the cycle rather than halfway through. So, diabetes is a good example of where they were involved all the way round the cycle from designing the service to procuring the service, to taking part in the assessment of that and then to the implementation and the engagement back out saying "This is what's been procured." *(CCG Manager)*

When PPIE was meaningfully supported by systems capabilities, we identified instances in which it acted as a co-ordination capability to transform services at a higher level beyond the CCG, within the broader healthcare system:

> If we notice that people come along with general issues and they keep coming along quite frequently, then you realise there's a problem in the system. But not only the CCG. We're becoming quite well known across all the NHS and other related public service organizations. So we link in with NHS England and the County Council to co-ordinate service offerings informed by PPIE. It's our job to use PPIE knowledge to shape the NHS maze because it's just such a crazy, complex system. *(CCG Manager)*

In some cases, PPIE forums held the capability to exert national influence over health service decisions, allowing their knowledge and experiences to be heard by senior politicians and decision-makers beyond their local area:

> Some of the GP practice PPIE groups are taking on a life of their own; so one of our practices they've got two doctors in the practice and 200 people in their patient participation group which is really sizeable and they're very active and vocal. So much so that they've met local MPs, they've met the Secretary of State, they've written to the Prime Minister. They're really getting the bit between their teeth. *(CCG Manager)*

In sum, while we noted there was some potential for system capabilities to stymie the influence of PPIE as a co-ordination capability, rendering acquisition of PPE knowledge tokenistic, our research paints a more optimistic picture. When formalised systems were in place to enhance and enable the acquisition, assimilation, transformation and exploitation of PPIE, patients and carers were able to influence decision-making about service (re)design across the whole healthcare system.

Socialisation Capabilities: Influencing PPIE Through Organisational Cultures

When considering the influence of socialisation capabilities on PPIE as a co-ordination capability, we identified two key themes. First, the importance of an organisational culture bringing together the knowledge of diverse groups of stakeholders (i.e. the public, clinicians, managers, etc.) and assimilating it in a way that all could understand. Second, the importance of representativeness and diversity of experience when engaging in PPIE.

It has long been acknowledged that a challenge for healthcare professionals and managers, patients and carers, is to reciprocally understand the other's perspective. Acronyms used by clinicians and managers during commissioning meetings could often be seen as a barrier to meaningful PPIE involvement. In our interviews, we often heard that PPIE representatives were keen for more education, not just towards understanding acronyms, but also education about the wider policy and strategy context shaping local decision-making. We heard that PPIE representatives wanted this information in order to leverage more influence over the development of healthcare services:

> A lot of our PPIE representatives want to have direct influence on the board. They want to increase our representation on the board to really transform services. They want more formal interaction with the board and feel that they had more power rather than just influence. *(CCG Manager)*

Supporting such aspirations requires socialisation capabilities in the form of an organisational culture which acknowledges, and carries out, the importance of clear and regular communication. Such an organisational culture supported PPIE as a co-ordination capability by acknowledging it was something that was situated over time and required ongoing interaction between decision-makers and PPIE representatives:

> At the local engagement fora we have somebody from the CCG describing a service or lack of a service. This stimulates the people who come to ask questions. At the end of the meeting hopefully the CCG staff go away, collate those questions and work out the answers. Now the answers may be communicated in part on the website, but they will also be flagged up again at the next meeting. So at the beginning of the next meeting the chairman will go over points that have been raised and the CCG's response to them. So it acts as a useful interactive way of communicating between the population and CCG. *(PPIE Representative)*

At the same time, the organisational culture needed to be one in which PPIE representatives are expected to show a responsibility to ensure any decision that they have influenced in a strategic arena is pushed back into the local-level system for action:

> They need to say, "right, this is what the plan is." They need to take that back to their forums within the GP practices and so on, present it to them and sell it to them as well and convince them that that is what needs to be done for all reasons and we're not doing what you ask because, because…" So their role is two-fold. One is to provide input, issues, concerns and all those sorts of things and then to take the output plans, critique them, challenge them and what have you, but also then to take it out to the patients they are representing, ensure actions follow, evaluate those actions, feed it all back up the system to the CCG. *(CCG Manager)*

However, while organisational cultures may ostensibly support PPIE as a co-ordination capability, there was a tension due to the danger that problems and priorities raised in PPIE did not align with those set nationally or to local strategy. Again, a need for education for PPIE representatives was emphasised by healthcare professionals and managers. However, at the same time, there was recognition by healthcare managers in particular, that care had to be taken not to bound contributions from PPIE representatives and merely co-opt them towards organisational strategic priorities:

> On occasions, they [PPIE representatives] will be too parochially preoccupied, sometimes with their own or a relative's condition, and demand a new service. We have our own priority setting processes agreed with our overlords, any such suggestions need to align with. At the same time, if we [GP practices and CCGs] keep hearing the same complaints and service demands, we need to ask ourselves if we have indeed got the priorities right for our population. Following which GP practices might be feeding up a consistent message to the CCG about how we need to respond. *(CCG Manager)*

The importance of acquiring, assimilating, transforming and exploiting the unique knowledge of PPIE representatives during decision-making related to service design was seen as particularly important due to the tacit nature of that knowledge. The complex experiences of patients and carers brought a unique understanding and perspective to discussions about service development "where PPIE representation highlights how patients fall between the cracks of services, where they might have long-term conditions, or multi-morbidity for example". This commonly constituted the type of 'soft intelligence' CCGs and their constituent GP practices sought for service improvement:

> A lot of these things brought in by PPIE are less concrete. They're more about, "I've got complex problems and I get bounced around between different services and it gets confusing, it makes me anxious, I don't know where I'm supposed to go next." *(General Practitioner)*

To support PPIE as a co-ordination capability, socialisation capabilities such as a supportive organisational culture need to create conditions in which the knowledge of PPIE representatives is incorporated in strategic decision-making, in such a way that enables them to challenge and disrupt normative forms of decision-making:

> Part of my role, given the support from PPIE representatives at practice level, is to say in strategic decision-making arenas: "Sorry, the patient group disagree with that because of X, and therefore we should change it." *(PPIE Representative)*

However, the representativeness of those involved in PPIE was seen as a pervasive problem. PPIE as a co-ordination capability was limited when "their [PPIE representative] engagement is sometimes limited to their own or relative's condition, and then often time limited" *(General Practitioner)*. The knowledge being acquired through PPIE was often coming from a narrow representation of the "middle class, well-informed folk" with the recurring question "how do you go beyond the well-meaning middle class, who are relatively well-catered for, and engage the hard to reach, more vulnerable populations"?

> How many people turn up to these meetings ['health forums' at CCG level designed for PPIE] when you consider that we've got a population of something like 370,000. In one area we usually get anything between 30 and 60 people. In another, it can vary between a handful and maybe 20. In a third area it's even fewer than that and yet the main population that looks for services, the elderly population, live out at the coast. That's really where one needs the greatest input from the population to the CCG. *(CCG Manager)*

PPIE representatives in our CCG who had managed to become significantly influential in service decisions tended to be more affluent, middle-class and educated, meaning the knowledge being acquired from them was skewed to one demographic:

> I've been involved with IBM who, whether you like them or dislike them, they are certainly one of the leading organizations in terms of management behaviours, structures and so on and forward thinking. So I've been exposed to that and had to live within that environment and they, amongst a number of other companies, are probably ten years ahead of the NHS in the way they do business and the NHS is struggling to catch up. They're not closing the gap, which is quite worrying. So I'm able to say "Well, why do you do it that way? Have you thought of…?" So I'm able to put constructive challenge into the system. *(PPIE Representative)*

However, the limiting influence of representation on PPIE as a co-ordination capability could be mediated by an organisational culture, which supported the involvement of a broader group of people. We noted this seemed to happen primarily at the GP practice level, where active efforts were made to increase their representativeness and diversity of experience:

> Even when we got PPIE going, we relied very heavily on our health forum committee to help us with strategic decision-making. And they are fantastic, but they are relatively a very small group of articulate people with their own ideas. Since when our strategy is to engage with our wider population and to involve them in the decisions we make and in the commissioning cycle, but engaging hard to reach groups, groups in most need of health care, in decision-making, has proved challenging. We have been successful in encouraging our GP practices around their patient participation groups. These bring in another whole group of people. *(General Practice Manager)*

In sum, socialisation capabilities in the form of organisational culture can influence PPIE as a co-ordination capability in two ways. First, by supporting the acquisition, assimilation, transformation and exploitation of the unique knowledge of PPIE representatives in a way which supports reciprocal communication between different stakeholder groups. And second, to ensure that acquired knowledge is representative of a broad group of thoughts and experiences beyond the 'usual suspects'.

Implications for Practice

At the start of this chapter, we highlighted how global healthcare policy is increasingly focused on the importance of PPIE for sustainable healthcare systems (Barnes, 1999; Church et al., 2002; DOH, 2010). Encouraging collaboration in decision-making about health service design between different stakeholders, drawing on the unique expert experience of patients and carers can improve service design and delivery, enhancing cost effectiveness and patient experience (Alford, 1998; Croft et al., 2016). We set out the potential for PPIE to act as a co-ordination capability, enhancing the capacity of organisations to mobilise knowledge for service development and delivery to render a healthcare system sustainable.

Drawing on our empirical work, we considered how PPIE is influenced by the other combinative capabilities: systems and socialisation capabilities. In doing so, we diverge from previous work into ACAP which suggests that, while systems and socialisation capabilities may initially create structures and organisational cultures, which ostensibly support knowledge mobilisation (for example, through formalised reporting systems or collaborative teams and committee groups), over time they may have a limiting influence on ACAP as systems become too rigid and certain types of knowledge may be overlooked (Van Den Bosch et al., 1999). In previous work, co-ordination capabilities are seen as mediating the limiting effect of systems and socialisation capabilities, thus enhancing ACAP (Harvey et al., 2009; Hotho et al., 2012). However, in this chapter we explored how co-ordination capabilities are actually supported by systems and socialisation capabilities, allowing us to further understand the practical interventions managers of healthcare systems can focus on to maximise the potential benefit of their PPIE efforts.

We highlight the importance of systems capabilities in the form of formalised structures for involvement. While previous work has suggested that such formalised structures are open to manipulation and could undermine PPIE (Croft et al., 2016), when managed properly we suggest they are crucial for ensuring PPIE as a co-ordination capability is supported. In particular, we warn against the danger of only embedding PPIE in the decision-making processes at late stages. This undermines the potential beneficial influence of PPIE on ACAP as strategic decisions have already been made, with patients and the public only latterly informed and then co-opted to support managerial decisions. Therefore, formalised systems of involvement need to ensure PPIE knowledge is acquired, assimilated, transformed and exploited throughout the decision-making process to ensure service designs are responsive to patient needs.

Alongside formalised systems of involvement, we emphasise the importance of organisational cultures as socialisation capabilities, which acknowledge and support the involvement of diverse perspectives and experiences. This requires the development of two different but interrelated priorities for health service leaders. First, clinicians and managers in healthcare organisations must emphasise the importance of two-way communication ensuring that expert information acquired through PPIE is seen as equally as important as expert information acquired from professionals. Doing so requires the move away from positioning PPIE representatives as ‘lay patients’ (Martin & Finn, 2011) rather than ‘experience-based experts’ (Collins & Evans, 2002). Organisational cultures need to ensure managerial control and priorities does not dominate decision-making (Rutter et al., 2004), or render the PPIE voice silent (Williams et al., 2020).

Second, while education of PPIE representatives is important to ensure they are able to meaningfully engage with decision-making at a strategic level, we also reflect on previous warnings about the professionalisation of PPIE representatives and their co-option into managerial agendas (Croft et al., 2016; El Enany et al., 2013). We emphasise the importance of an organisational culture, which promotes the importance of diversity and representativeness across all those engaged in decision-making processes. We warn against the danger of only hearing the voices of middle-class individuals as opposed to marginalised or vulnerable groups who may be less likely to share their knowledge and experience. A lack of diversity within PPIE will limit its potential as a co-ordination capability, meaning that socialisation capabilities need to promote and actively seek out involvement from representatives across society.

There is a profound need for future research to pay more attention to mechanisms, which will support this quest for diversity of knowledge and experience within healthcare organisations. We align with the call to arms from another chapter in this book *(How to develop inclusive, sustainable leadership in nursing? Clean the sticky floor!)* to emphasise the global responsibility we face in addressing structural and social inequalities which perpetuate the under-representation of marginalised groups in decision-making (Fitzsimmons & Callan, 2020). Leaders of healthcare organisations are responsible for nurturing organisational cultures in which under-represented individuals have the ability, motivation and opportunity to have their voice heard during processes of decision-making. Academic researchers, working in an industry which also struggles with diversity and representation, have a responsibility to develop an evidence base to support the development of combinative capabilities creating more equitable organisational contexts.

In conclusion, healthcare organisations need to reduce the variance between their potential and realised ACAP to improve their organisational performance, effectiveness and sustainability (Zahra & George, 2002). While organisations commonly have systems in place to acquire and assimilate information from patients and the public, those systems only support the development of potential ACAP. PPIE will only act as a co-ordination capability when the knowledge acquired and assimilated is subsequently transformed and exploited, developing realised ACAP. This relies on formalised systems of involvement at all stages of knowledge translation in decision-making processes and the development of organisational cultures, which prioritise diverse and meaningful PPIE.

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PART II

Intervention for Sustainable Healthcare Delivery

CHAPTER 6

How to Develop Inclusive, Sustainable Leadership in Nursing? Clean the Sticky Floor!

Charlotte Croft and Altricia Dawson

Introduction

Western healthcare organizations have a significant 'sticky floor' problem in which the upward mobility of women from ethnic minorities into leadership roles is limited by organizational, social and structural mechanisms (Johnson et al., 2021; West et al., 2015). In the English NHS, 20% of nurses are from an ethnic minority background, but only make up 4% of Directors of Nursing (Sealy, 2020) and significant pay gaps remain between White and non-White nurses (Fund, 2018). Only 69.9% of ethnic minority employees believe their organization provides equal

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opportunities for career progression, a year-on-year deterioration since 2015, and in contrast to 86.3% of White employees (Findlay et al., 2021). Further to this, female nurses from ethnic minority backgrounds are even more disadvantaged than their other nursing colleagues (i.e. ethnic minority men or White women) due to enduring structural and cultural barriers which undermine their move into leadership positions (Aspinall et al., 2021; Brathwaite, 2018).

Beyond the moral imperative to advocate for a more equal society, a lack of diversity in nurse leadership has a significant practical impact on the sustainability of healthcare systems. Organizations perceived by their employees as having equal and inclusive representation in nurse leadership roles enjoy enhanced decision-making processes, performance and profitability (Newman et al., 2019), improved motivation and engagement of staff and increased patient satisfaction (Fund, 2018). Organizations perceived as non-inclusive show low morale, high staff turnover and increased recruitment costs to sustain the workforce (Fitzsimmons & Callan, 2020). However, despite the clearly positive impact of developing healthcare systems, which support inclusive nurse leadership, there exist significant challenges in its realization (Johnson et al., 2021; Sealy, 2020).

One challenge is the proliferation of well-intentioned but non-impactful 'Leadership Development Programs' (LDPs) targeting under-represented groups, such as the 'BME Talent Pipeline' (NHS Improvement, 2019). Problematically, research suggests that even when individuals from under-represented groups engage in LDPs, they commonly struggle to emerge and be accepted as leaders within organizations due to widely held stereotypes about 'leaders' being White men (Meister et al., 2017; Rosette et al., 2016; Schock et al., 2019; Zheng et al., 2018). These stereotypes are used to encourage people to 'fit' within leadership boundaries and characteristics, which identify and categorize others as 'leaders' or 'followers' within normative parameters (Lord et al., 2019). Problematically, LDPs rarely succeed in addressing culturally or structurally embedded systems of oppression, explaining why even when individuals from under-represented groups engage in LDPs, they commonly struggle to emerge and be accepted as leaders due to social structures of inequality (Improvement, 2019; Meister et al., 2017; Rosette et al., 2016). In other words, there is a tendency to try and address lack of inclusivity in nurse leadership by 'fixing the person' rather than addressing gendered and racialized organizational contexts that facilitate or undermine inclusive nurse leadership (Brathwaite, 2018; Vogel et al., 2021).

In this chapter, we outline why encouraging inclusive leadership through LDPs alone is likely to be unsuccessful due to enduring social and structural inequality (Liu, 2020). We draw on the concepts of intersectionality and the Ability-Motivation-Opportunity framework to illustrate why we cannot achieve more inclusive, representative forms of leadership in nursing if we fail to adequately consider the contextual impact of not being seen as a stereotypical leader (Fitzsimmons & Callan, 2020). This renders large proportions of the nursing workforce 'invisible' due to the intersection of their race and gender (Smith et al., 2019). We discuss current leadership initiatives in nursing such as Stepping Up (NHS Leadership Academy), but also draw insight from other approaches across the public, private and third sectors. We draw on evidence of best practice from management consultancy (Price Waterhouse Coopers Multicultural Business Network), banking (Lloyds Banking Group Race Action Plan), legal services (Linklaters BAME Network) and the teaching profession (The Runnymede Trust report 'Visible Minorities, Invisible Teachers'). We also draw on reports highlighting the need for more inclusivity in leadership across the civil service ('Identifying and Removing Barriers to Talented BAME Staff Progression), police (Getting Ahead London Report) and the FTSE 100 more generally through reporting from the Chartered Institute of Personnel and Development (CIPD) and the Institute for Business Ethics (IBE).

Drawing together insights from this diverse range of settings, we aim to make practical recommendations to facilitate the development of sustainable healthcare systems by encouraging more inclusive forms of leadership. We outline how contextually based LDPs can enhance the *ability* of under-represented individuals to act in leadership roles, but that their *motivation* and *opportunity* to do so needs to be supported by organizational-level initiatives.

The Sticky Floor in Nursing

Barriers to inclusivity stemming from organizational culture and leadership stereotypes perpetuate system inequities in the workforce, unrelated to individual ability (The Lancet, 2018). This problem can be understood further by drawing on intersectionality theory, which recognizes that different social groups occupy different positions within social structures that vary in the degree of privilege and power they afford (Cole, 2009; Purdie-Vaughns & Eibach, 2008; Stewart & McDermott, 2004). Belonging to more than one marginalized social group has a cumulative effect, creating combined inequities and disparities (Smith et al., 2019). From this perspective, the effects of ethnicity and gender are not independent of one another but instead are intertwined and multiplicative (Crenshaw, 1989). Those holding one or more subordinated group memberships are subject to intersecting societal structures of oppression that reinforce inequality (Collins, 2000). In short, intersectionality theory gives insight into why Black women face significantly different challenges than White women or Black men, due to the intersectionality of multiple subordinate social groups (i.e. their ethnicity and gender), perpetuated by social and structural inequality (Livingston et al., 2012; Rosette et al., 2016).

Intersectionality theory can therefore be used to explain the inhibitive effect of the organizational "sticky floor" in which the upward mobility of ethnic minority women into leadership roles is limited by organizational, social and structural mechanisms (Aspinall et al., 2021; Samuelson et al., 2019). It is not enough to just clear a pathway to leadership by increasing individual ability through LDPs, the sticky floor needs to be cleaned to challenge the organizational and structural mechanisms that undermine the motivation and opportunity for female nurses from minority social groups to move into leadership positions (West et al., 2015). We argue that inclusive nurse leadership will never be achieved in healthcare if the contextual impact of leadership norms and stereotypes is not addressed—norms which render large proportions of the nursing workforce 'invisible' or 'not leadership material' due to the intersection of their gender and ethnicity (Brathwaite, 2018; Johnson et al., 2021; Smith et al., 2019).

To understand how to address these issues and move beyond 'fixing the person' to 'fixing the problem', we draw on the Ability-Motivation-Opportunity (AMO) framework (Blumberg & Pringle, 1982), to demonstrate the impact of organizational environments on individual performance. LDPs focus on developing the 'ability' of individuals, but rarely succeed in addressing culturally or structurally embedded systems of inequality, explaining why even when individuals from under-represented groups engage in LDPs, they often struggle to emerge and be accepted as leaders (Meister et al., 2017; Rosette et al., 2016). The AMO framework offers an opportunity to move beyond this individual-centred approach of LDPs by highlighting the importance of HR policies such as staffing, training, incentives and job design. These HR policies address the organizational barriers that impact the ability, motivation and opportunity for individuals to engage in leadership (Kaše et al., 2013). In other words, AMO gives insight into how the impact of LDPs in improving individual *ability* is mitigated by a failure to also address the organizational-level issues of *motivation* and *opportunity* and offers a structure on which to build evidence-based solutions.

Cleaning the Sticky Floor: Insights from the AMO Framework

Ability

The ability-enhancing dimension of the AMO framework reflects the degree of investment in organizational practices intended to improve the knowledge, skills and abilities of employees (Wright & Kehoe, 2008). Research in this area advocates the need for organizations to support individual female nurses from ethnic minorities to gain extra skills, which might propel them into leadership roles. As noted previously, the 'ability' aspect of this framework is where most attention is focused when attempting to address issues of inclusivity in nurse leadership. LDPs in the NHS targeting employees from ethnic minority backgrounds, such as the 'Ready Now' Programmes—Leadership Academy, emphasize the importance of improving individual ability to succeed. Advertising materials for these programmes contain statements such as "*You've worked your way up. You've trained, self-improved. You've given up your own time. You've inspired others and earned respect. You've overcome adversity. You've proven just how good you are. But you're not done yet*" and contain statements from previous participants such as "*Immediately after joining the programme, I realised that I needed to close the gaps in my personal leadership development if I wanted to become an effectual leader*". The focus for improving ability to progress into leadership positions is placed firmly at the individual level.

However, intersectionality theory suggests that without addressing the underlying organizational culture issues that perpetuate systemic inequality, LDPs alone will be inadequate. This is one explanation for the limited success of the 'BME Talent Pipeline' (Improvement, 2019) in redressing the under-representation of female nurses from ethnic minorities in leadership positions. Therefore, LDPs need to work alongside interventions that target broader areas of the organizational context that can motivate and provide opportunities for female nurses from minority backgrounds. Problematically, structural support is often developed in isolation from LDPs. We, therefore, address issues of motivation and opportunity as the way forward in addressing inequalities in nurse leadership.

Motivation

The motivation enhancing dimension considers organizational practices that increase an individual's motivation to move into leadership positions; i.e. higher pay, increased social influence, etc. (Obeidat et al., 2016). However, such practices have done little to improve inclusivity in nurse leadership. One problem is the lack of visibility of women from ethnic minorities as role models in nurse leadership, perpetuating the problem of the sticky floor (Brathwaite, 2018). Nurses from under-represented groups perceive barriers to upward mobilization based on the lack of role models and therefore are not motivated to take on leadership roles because they think it is not possible. The lack of female ethnic minority nurse leaders also reduces opportunities for mentorship of other ethnic minority nurses at earlier career stages.

Therefore, an important, yet often overlooked, aspect of mitigating gender and racial bias is ally-ship, the extent to which White men and women support and advocate for non-White women in the workplace (Mattingly, 2019). Encouraging ally-ship through engagement initiatives that enhance knowledge about equity in leadership roles, focusing on what individuals can do, instead of on avoidant behaviours, can have positive effects on workplace inclusivity, job satisfaction and lower turnover of under-represented staff (Girod et al., 2016; Mattingly, 2019). However, the perception and interpretation of leadership inequity within organizations is interrupted by a gap between understanding challenges for non-White women and applying that knowledge into practice (Böhmer & Schinnenburg, 2018). This suggests a need for organizations to sensitize individuals to the challenges of creating a successful career for female ethnic minority nurses, and motivating them to engage in developing solutions that can affect change (Böhmer & Schinnenburg, 2018; Gloor et al., 2018).

Ally-ship cannot be used as a performative mechanism, such as position statements that racism is unacceptable, but should constitute an active move towards changing the systemic barriers to inclusive leadership (Burnett et al., 2020). White ally-ship is the continuous and reflexive practice of proactively interrogating Whiteness from an intersectionality perspective, leveraging White power and privilege to interrupt the cultural status quo (Erskine & Bilimoria, 2019). Ally-ship is built on the understanding that it is not the role or responsibility of female ethnic minority nurses to address the systemic and structural inequalities, which undermine their progression into leadership roles. It is the responsibility of White colleagues at all levels, and particularly those in senior leadership positions, to critically reflect on the marginalization of ethnic minority women in nursing leadership (Puzan, 2003) and engage in prosocial behaviours and actions that create a more inclusive organization.

In short, ally-ship requires action from White colleagues, demanding they are continuously aware of the power and privilege they enjoy due to their ethnicity (Grimes, 2001). White allies must also engage in prosocial behaviours such as sponsoring, mentoring and protecting colleagues from organizational conditions, which may undermine their progression (Bolino & Grant, 2016). Such practices need to embed across all levels of an organization if they are to begin to mediate long-standing structural and social structures of exclusion. However, due to the institutionalization of White leadership in Western healthcare, organizational cultures are difficult to change, and at times organizational leaders are unable to identify where change is needed (Iheduru-Anderson, 2020).

One way of improving ally-ship is through formal recognition of the advocacy work that staff are already doing in the organization. For example, rewards for advocacy work may be financial. Linklaters, the law firm, ensures partners, associates and their teams that have additional responsibility for delivering against diversity agendas, are remunerated for achieving agreed goals or outcomes. Another approach is to embed responsibility for delivering measurable diversity outcomes into the performance objectives of senior managers. In the UK Civil Service, those in leadership (Senior Civil Service) roles now have responsibility for delivering diversity initiatives written into their job description. More broadly, a trend towards embedding ally-ship in the culture and routines of the organization is gaining momentum according to the Institute for Business Ethics. The private sector has seen an increase in the number of FTSE 100 firm executives making themselves directly accountable, alongside their colleagues, for delivering on their commitment to inclusivity through measurable objectives (Gilshan & Chambers, 2020). For example, PriceWaterhouseCoopers set out clear performance metrics to measure their diversity programme and have committed to ensuring that 30% of partners in the firm are from under-represented backgrounds by 2025.

While a personal commitment from organization CEOs is crucial, a test of the efficacy of organization-driven diversity initiatives is whether the leadership in these organizations becomes more diverse as a result. Critics suggest that the initiatives are often seen as piecemeal (Puritty et al., 2017) and argue that more work needs to be done to ensure that perceptions of leadership roles are not viewed as unattainable by under-represented groups. As a recent report for the Chartered Institute for Professional Development emphasized, there is a "*need for belief in the career ladder*" [and] "*belief there is a place for all employees*" (CIPD, 2018, p. 17).

Opportunity

Opportunity enhancing practices provide opportunities for individuals to participate in substantive organizational decision-making (Tsai, 2001; Wright & Kehoe, 2008). There is a need for sustainable healthcare organizations to develop strategies for structural mechanisms to support opportunities for the advancement of female ethnic minority nurses into leadership roles. For example, formal mentoring programmes can have a positive effect on increasing diversity within leadership (Bhatia et al., 2015; Bhattacharya et al., 2018; Cohen-Jarvie, 2019; Mitchell, 2018; Pololi et al., 2016; Saad, 2018; Varkey et al., 2008). Mentoring gives under-represented groups insight into organizational issues, while increasing motivation for organizational leaders to implement organizational change (Mitchell, 2018; Woolnough et al., 2006). Mentoring relationships are effective in giving opportunities for under-represented individuals to move up the pipeline into leadership positions, when supported by clear succession planning early in a career (Mitchell, 2018; Piper-Hall, 2016). This approach includes co-developing organizational incentives that improve diversity in leadership, such as targeted funding for training and travel, implementing transparent recruiting and selection processes, and actively seeking out female ethnic minority nurses for mentoring. Effective mentorship programmes need to be authentic, and give opportunity for participants to contribute to decision-making about 'real life' problems (Guskey, 2003; Guskey & Yoon, 2009). Thus, the opportunities that mentoring and other development training provide to the individual must be based around meaningful involvement in organizational decision-making.

One way to ensure dialogue across an organization is reverse mentorship, in which an employee from an ethnic minority background closely interacts with a senior leader (Robinson, 2018). Reverse mentoring challenges traditional assumptions of the mentoring relationship, abolishing the typical hierarchy between mentor and mentee, and has been implemented with some success in healthcare (Raza et al., 2020) as well as in technology-driven multinational corporations (Chen, 2013). Emerging research into reverse mentoring suggests positive impacts on the opportunity for women from ethnic minority groups to progress into leadership roles. One London NHS trust trialling reverse mentoring with a group of senior managers reported before reverse mentoring that they had "*three BME staff at Band 8c or above but now there are 13, with one very senior manager at board level*" (*Nursing Times*, 24th May 2016).

Recommendations to 'Clean' the Sticky Floor

How can we go about cleaning the sticky floor to support inclusive leadership in sustainable healthcare systems? Intersectionality theory gives insight into why the ability, motivation and opportunity for women from ethnic minority groups to move into leadership positions need to be tackled at an organizational level, rather than by placing the emphasis on the individual (Smith et al., 2019). It is not the responsibility of under-represented groups to challenge embedded systems of social inequality which exclude them from leadership positions due to the intersection of their race and gender (Livingston et al., 2012; Rosette et al., 2016). Instead, organizational leaders need to ensure they embed strategies that support inclusive nurse leadership to increase the efficiency, safety and sustainability of their healthcare organization.

We do not suggest that LDPs have no place in tackling the challenge of supporting inclusive nurse leadership. LDPs can have a significant impact on the ability of individuals to move into leadership roles. For example, Lloyds Bank recently showed that individuals from under-represented groups, who had been through their own leadership development programme, were significantly more successful in their career progression than those who had not (Lloyds BAME strategy, 2019). However, LDPs must reflect contextually relevant, real-world training alongside organizational interventions to support, not only the ability, but the motivation and opportunity of women from ethnic minorities to move into leadership positions.

To support the *ability* of women from ethnic minority backgrounds to move into leadership positions, we advocate for a shift towards more contextually based LDPs. Many existing LDPs rest on the assumption that one size fits all and that the same group of skills or style of leadership is appropriate regardless of individual background or circumstance (William, 2002). This can lead to development programmes that provide a complex web of competencies and recommendations that are focused on 'fixing the person' and places the responsibility for creating sustainable healthcare systems on the under-represented individual. Consideration should be given to contextually focused LDPs that balance the needs of the organization and the skills required by potential female leaders from ethnic minorities to enable them to lead effectively.

Motivating women from minority backgrounds to take on leadership positions may be more complex due to enduring social inequality. Research in other public sector professions has clearly highlighted a need for structural changes to motivate under-represented individuals to aspire to leadership roles. A 2020 report on the teaching profession by the Runnymede Trust indicated the majority of teachers from ethnic minorities did not feel positive about their appraisal system, with 24% of those interviewed believing it to be punitive rather than supportive (Byrne, 2020, p. 12). We argue that the motivation of ethnic minority women to aspire to leadership roles can be enhanced by ally-ship from White colleagues. Organizations providing support for ongoing reflexivity from White colleagues can change the organizational climate to one more supportive of inclusive leadership in nursing. Investing in strategies that encourage senior White colleagues to mentor colleagues from under-represented groups, and protect them from systemic inequities within organizational structures, is crucial in challenging the existing organizational status quo. Therefore, more work is needed to identify the best practices at an organizational level, including ally-ship behaviours from White colleagues, which can successfully encourage under-represented individuals to put themselves forward for leadership roles.

However, our primary recommendation is that the *opportunity* for women from minority backgrounds to move into leadership positions is crucial to developing sustainable healthcare systems. This sentiment is reflected across multiple industries, with organizational strategy increasingly focused on the importance of inclusive leadership. The House of Commons in the UK has committed to increasing the representation of ethnic minority women within its workforce through a diversity and inclusion strategy. In the private sector, Lloyds Bank has attempted to address the wider structural challenges facing ethnic minority women by makingdiversity one of its core brand values. Its business case for the inclusion of diversity as one of its core values is that an organization, which reflects the diversity of its customers, can deliver better quality customer service. BP and Unilever have made similar corporate statements, with the latter commenting that the responsibility for increasing staff diversity lies "with Executive level sponsors who approve all ethnic diversity activities" (CIPD, 2018, p. 12).

Problematically, strategy statements about improving opportunity can often be performative, rather than authentic attempts at improving inclusivity. Authentic, contextually based LDPs, ally-ship and (reverse)mentoring are required if organizations are going to effectively address the issue of the sticky floor in nursing. One key recommendation is to ensure attention is paid to measuring the results of organizational interventions to improve inclusivity. When organizations fail to track and measure changes in leader demographics over time, they increase the likelihood that organizational initiatives will not be taken seriously and that they may appear inauthentic, decreasing motivation and opportunity for under-represented groups (Webster-Wright, 2009).

Implications for Practice

The need for more inclusive forms of leadership, both within healthcare and beyond, to address structural and social inequality has never been more pronounced (Fitzsimmons & Callan, 2020). Lack of inclusion of female nurses from ethnic minorities in nurse leadership is increasingly noted as a significant problem for the sustainability of Western healthcare systems (Beech et al., 2019; Sealy, 2020). Beyond this however, the need to address the systemic structural inequalities, which perpetuate cultures of exclusion, rather than inclusion, is increasingly important. Increased international awareness of these issues are creating a historical moment of change, reflected through the Black Lives Matter campaigns (Lebron, 2017) and the reaction to the comments published by the UK Commission on Race and Ethnic Disparities report about racial fairness (Iacobucci, 2021). However, there is a lack of research about how to tackle these enduring issues, meaning interventions are often piecemeal, contextually detached or performative. Organizational leaders in healthcare have a responsibility to create environments in which under-represented individuals are motivated, and have the opportunity, to move into leadership positions. But they need a cohesive evidence base from which to do so, an evidence base which is currently lacking. Academic researchers, working in another industry characterized by under-representation of women from ethnic minorities in leadership positions, have a responsibility to help develop this evidence base. It is time for us all to challenge our enduring assumptions about 'leaders' and meaningfully work together to create more inclusive, sustainable organizations.

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CHAPTER 7

The Practices and Processes of Strategic Leadership

Sarah Woolley and Graeme Currie

INTRODUCTION

It would be odd if a text about sustaining high quality, affordable and equitable healthcare aimed at managerial practitioners, as well as academics, did not deal with the thorny issue of strategic change. This chapter takes such a focus, specifically how to manage the process of strategic change.

Healthcare is a classic pluralistic domain requiring managers to negotiate multiple stakeholder interests and relations (Denis et al., 2007; Jarzabkowski & Fenton, 2006) in the process of care delivery. This typically involves delivering change initiatives to accommodate high quality individualised care and population-level cost control, whilst simultaneously

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responding to the demands of professionals, administrators, regulators and patient groups (Denis et al., 2001). This context tends to stymie the implementation of national policy imperatives that need to be delivered for a sustainable healthcare system, at local service delivery level, creating several critical challenges that healthcare leaders need to overcome. In their seminal analysis of prospects for strategic change, Pettigrew et al. (1992), highlighted inertia that characterised the NHS, derived from bureaucracy and powerful professional interests. Increasing demand for healthcare and its costs means such inertia must be overcome for sustainable healthcare delivery. It is not sufficient to develop strategic plans for this; it is crucial that attention is paid to implementation of strategy, i.e. strategy process is as significant, if not more so, than strategy content, for sustainable healthcare.

First, the volume of stakeholder demands places significant strain on managerial capacity and creates challenging leadership roles (Jarzabkowski & Fenton, 2006). Second, powerful professionals (primarily doctors) with high levels of autonomy and expertise (Denis et al., 2007; Jarzabkowski & Fenton, 2006) are well positioned to limit the hierarchical and positional authority associated with management activities (Ackroyd, 1996; Waring & Currie, 2009). Leaders, therefore, need to adopt participative strategising practices that involve multiple managerial levels and professions in service delivery and change processes. These participative approaches, however, can slow change efforts (Denis et al., 2007), through effects linked to vague objective setting and action planning (Denis, et al., 1991) and escalating indecision (Denis et al., 2011), as managers attempt to accommodate multiple demands.

Whilst this context represents a substantial leadership challenge, evidence from both public sector healthcare and more commercial managerial settings provide important insights about the strategising practices that leaders can use to overcome these challenges and to deliver policy imperatives within their organisations. This chapter progresses by exploring these insights in more depth and illustrating how leaders strategising practices can have different effects on enabling and disabling healthcare delivery at local level. We then present a case study which shows two strategic leadership practices healthcare managers can use to overcome some of these tensions: by setting contexts (Bower, 1970; Burgelman, 1983a) through role expectations (Floyd & Wooldridge, 2000; Mantere, 2008) and performance monitoring systems and boundary work (Gieryn, 1983) to support collaboration. Finally, this chapter ends by summarising these academic insights into leadership lessons for healthcare managers, executives and board members.

In discussing these leadership challenges, we focus primarily on how leaders enact and implement strategy in response to top-down policy imperatives. We draw on a strategy as practice theoretical frame (Vaara & Whittington, 2012) to define strategy in healthcare as the actions, interactions and negotiations of multiple actors that are consequential for the long term outcomes, direction and survival of organisations and services (Jarzabkowski et al., 2007). This includes activities associated with enacting strategy such as planning, resource allocation, monitoring and control (Jarzabkowski & Fenton, 2006), as well as the managerial discourses involved in talking about strategy (Barry & Elmes, 1997) and other micro-practices such as meeting arrangements (Jarzabkowski & Seidl, 2008). From this perspective, strategy is an activity that is a collective phenomenon, involving managers at executive, middle operational and frontline levels, rather than an activity that is the preserve of managerial elites (Jarzabkowski et al., 2007). Consistent with this, we treat leadership within the healthcare context as a collective, distributed activity, constructed through interaction and involving managers operating at different levels, both within traditional organisational boundaries, as well as managers operating in more networked forms of service delivery (Currie & Lockett, 2011; Denis, et al., 2012).

The Evidence for Participative Strategising Processes

Participative strategising approaches (Denis et al., 2007) involve the establishment of shared leadership arrangements (Currie & Lockett, 2011; Denis et al., 2012), which typically operate across multiple levels of management within provider services (Denis et al., 2001) and extend across broader healthcare economies and delivery networks (Denis et al., 2011) (see Fig. 7.1). Leveraging shared leadership structures and processes to facilitate effective participative strategising at these multiple levels is critical to building and developing sustainable healthcare (Denis et al, 2001, 2010; Fitzgerald et al., 2013); however, there are several challenges to achieving this in practice.

First, shared leadership contexts are by their nature, heterogeneous and comprise individuals from different professional disciplines, e.g. accountancy, human resources, legal, medical and nursing. Leaders and

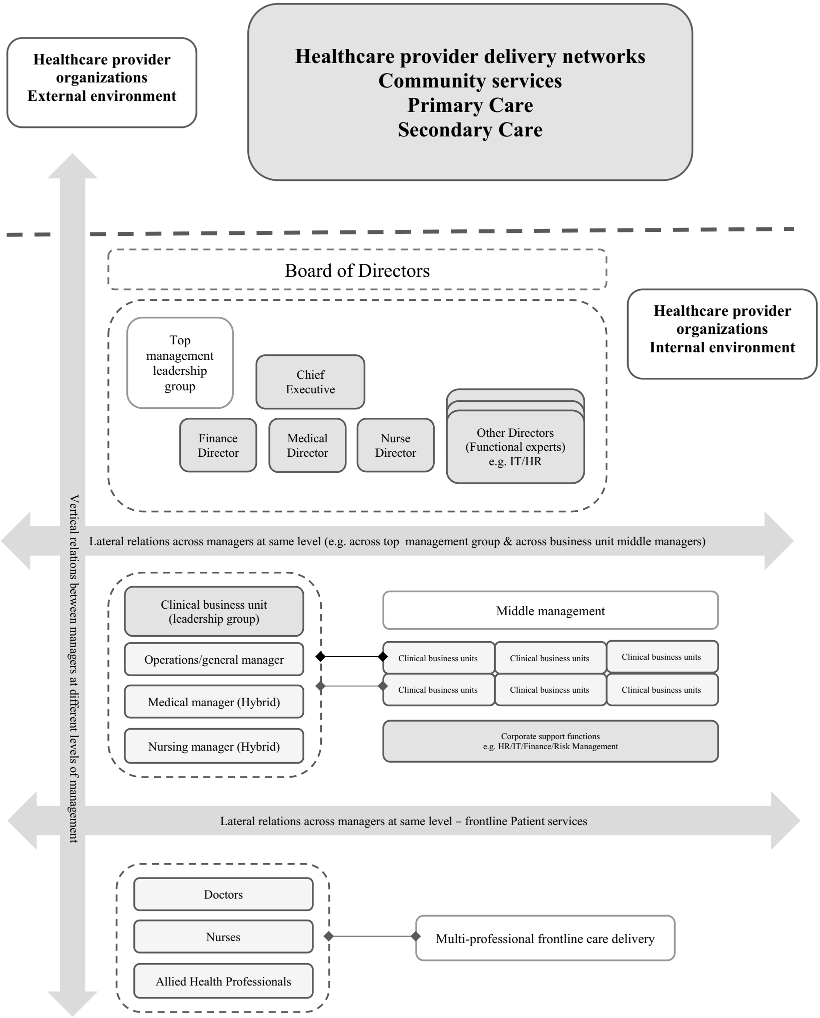

Fig. 7.1 Typical shared leadership groups in healthcare organisations

managers have therefore been socialised according to different professional and occupational cultures, and this influences their individual values, norms of practice and worldviews (Anteby et al, 2016; Van Maanen & Barley, 1984). These variations can lead to conflict and misunderstanding between leaders, as individuals attempt to come to a shared understanding and engage in concerted action (Dougherty, 1992; Fiol, 1994). In healthcare, differences in these socialisation processes influence the way change and policy developments are enacted on the ground. For example, social and cognitive boundaries between professional groups can act as barriers to the spread of innovative practice developments (Ferlie et al., 2005).

Second, professional groups engage in boundary work to maintain, change or broaden their practices (Gieryn, 1983; 1999) and associated power bases (Abbott, 1981). As professions interact, professional boundaries are negotiated (Thomas & Hewitt, 2011) and conflicts emerge as they contest issues related to professional authority and divergent prescriptions for action (Bucher et al., 2016; Chreim et al., 2013; Reay & Hinings, 2009). Combined with this, individual accountability demands from professional regulators can pull against collective group action as leaders seek to protect and prioritise their individual professional concerns, rather than collective objectives (Currie & Lockett, 2011; Ferlie et al., 2003).

Third, sharing leadership across multiple actors leads to role ambiguity (Denis et al., 2010). Although leaders typically have specialised expertise and different functional roles (e.g. finance, human resources, nursing and medicine), their roles are interdependent and collectively contribute to overall service objectives and delivery. This creates practical tensions for leaders to negotiate in terms of their individual expertise and legitimacy (specialisation); the division of labour between leaders and the extent of role overlap (differentiation) and the scope of their collective resources (complementarity, i.e. expertise, legitimacy and relationships) (Denis et al., 2010). The leadership role ambiguity associated with these contexts has different effects on strategy making, at times enabling change (Buchanan et al., 2007; Denis et al., 2001), as well as, contributing to problematic strategic change initiatives (Abdallah et al., 2011; Chreim, 2015).

Finally, these leadership configurations in healthcare are often fragile and prone to change, making it difficult for leaders to sustain a shared collective understanding of strategic situations and contexts over time

(Denis et al., 2001). Effecting strategic change requires leaders to stabilise collective activities by aligning organisational goals with the external demands and constraints of the environment and the interests of its internal members.

The following sections now focus on how leaders can overcome some of these challenges to support delivery of sustainable health services, primarily through the establishment of collaborative strategising processes.

Top and Middle Manager Roles During Participative Strategising

Top Management Teams (TMT) are the group of managers who form the apex of an organisation's hierarchy (Hambrick, 1994; Mintzberg, 1979). They are typically composed of a Chief Executive Officer (CEO), who has overall responsibility for the conduct and performance of the entire organisation (Finkelstein et al., 2009) and a small number of executive officers who report directly to this role (Finkelstein, et al., 2009). In classic managerial theory, top managers have traditionally been viewed as the principle leaders and architects of organisational strategy, employing top-down managerial planning processes, with subordinates and middle managers focusing on implementation (Andrews, 1971; Chandler, 1962; Mintzberg et al., 2009). However, traditional top-down hierarchical approaches to strategising and service delivery are constrained by the multi-professional context of healthcare (Mintzberg, 1979).

More recent perspectives suggest that leaders need to view strategising as an evolving process of mutual involvement between top managers and middle managers (Bower, 1970; Mintzberg, 1979), where strategy formulation is intimately connected with implementation (Mintzberg, 1979). Planned top-down strategising processes do not necessarily follow top management planned direction (Mintzberg & McHugh, 1985; Pettigrew, 1992): strategic action can at times be emergent (Mintzberg, 1991; Mintzberg & Waters, 1985) and occur in the absence of top management planning or strategic intent. Equally, whilst top management strategy can be intended and deliberate, at times, these intentions may never become realised because of resistance or changing circumstances (Mintzberg & Waters, 1985). Strategy is increasingly viewed as inherently emergent activity (Burgelman, 1994; Mintzberg & McHugh, 1985; Mintzberg & Waters, 1985), where various top-down intentional processes like resource allocation (Bower, 1970; Noda & Bower, 1996) and context setting (Burgelman, 1983a, 1983b) are interwoven with bottom up processes, involving business unit entrepreneurship (Burgelman, 1983b), experimentation and learning (Mintzberg & McHugh, 1985; Mirabeau & Maguire, 2014).

Pettigrew and colleagues' classic study of strategic change in the English NHS (Pettigrew et al., 1992) sets out some of the top-down strategising practices (primarily linked to context setting and resource allocation) that act as enablers for service delivery and development. Their study showed that leaders can create "receptive contexts for change" (Pettigrew et al., 1992, p. 268) by orchestrating several interrelated activities, which include: enabling coherent actionable policy (e.g. aligning clinical and financial incentives); resourcing people to lead change; enforcing policy imperatives; enabling effective managerial-clinician interfaces; and facilitating inter-organisational relations and networks. However, top-down strategic planning processes do not always get implemented on the ground because of localised dynamics at service provider level, with the depth, breadth and rate of change influenced by a range of factors, including: interaction of different professionals and managers (Currie & Spyridonidis, 2015); approaches to distributing change leadership roles (Denis et al., 2001; Fitzgerald et al., 2013); and application of performance monitoring tools (Kellogg, 2011).

The managerial interface between middle managers and top managers (Raes et al., 2011) is important for coordinating vertically and laterally, because it provides a critical communication channel to integrate different managerial roles and the various top-down and bottom up strategising activities linked to these.

Middle managers role in assisting downward strategy implementation is well established (Wooldridge et al., 2008). Importantly, however, middle managers also exert upward influence over top managers, through a variety of "bottom up" tactics (Wooldridge et al., 2008). For example, middle managers are entrepreneurial, spotting new business opportunities and championing these to top managers, changing the direction of corporate strategy (Burgelman, 1994). This is powerfully demonstrated in Burgelman's study of Intel where middle and operational managers diverged from top managers' formally articulated strategy (which was to be leaders in the memory chip market) and shifted resource allocation to microprocessors, which were the most profitable areas of the business, at that time. Top managers then redirected Intel's strategy to this more profitable market area and exited the memory chip business (Burgelman, 1994). Similarly, middle managers also influence strategic direction through the process of issue selling, where they focus top manager attention by proposing and defining particular issues for consideration (Dutton & Ashford, 1993; Dutton et al., 1997). Middle managers, therefore, are central to supporting organisational adaption to change (Burgelman, 1983, 1991, 1994) and are critical for assisting top manager strategising more generally by: improving the prioritisation and integration of organisational goals (Ketokivi & Castañer, 2004); improving strategic decision making (Wooldridge & Floyd, 1990); and making strategies more realistic (Mintzberg, 1994). Broadly, we can think of middle managers as playing four critical roles in strategising (Floyd & Wooldridge, 1992): championing alterative strategic options and courses of action; synthesising information from different top and operational management sources; facilitating adaptability by encouraging action that diverges from intended official strategic direction; and implementing strategy by aligning organisational action with strategic intention (Floyd & Wooldridge, 1992).

Top manager context setting practices (Burgelman, 1983a, 1994) moderate the extent to which middle managers are involved and contribute strategy making. Context setting can be thought of as the "top down" mechanisms executive (top) managers use to connect corporate strategic activities with middle and operational management activity (Bower, 1970; Burgelman, 1983b, 1994). This includes activities like organisational configuration, planning, resource allocation, monitoring and control systems. In conjunction with these more formalised top-down activities, top managers influence middle manager participation more informally through symbolic means (Child & Smith, 1987; Gioia & Chittipeddi, 1991) and by creating opportunities for face-to-face interaction (Jarzabkowski, 2008) and conversation (Ford & Ford, 1995). Face-to-face interactive strategising (Jarzabkowski, 2008) assists top managers implementing strategic change by shaping middle manager meanings and norms of practice, as well as persuading and mobilising opinion leaders.

Context setting can be enabling, as in Burgelman's study (1983b) of GAMMA technologies, where top managers set the context for operational entrepreneurial activity by: creating a new venture department (NVD); assigning managers to the NVD who held particular mindsets; and setting criteria for new venture project evaluation (Burgelman, 1983b). Top manager context setting, however, is not always enabling

(Currie & Procter, 2005; Mantere, 2005). In Currie and Procter's (2005) case of an NHS hospital, top managers initially encouraged entrepreneurial business development activity amongst middle managers, and then subsequently curtailed these activities by introducing business unit performance targets that focused on short term policy goals, in response to changing government policy focused on improved efficiency (Currie & Procter, 2005).

Establishing role expectations across top and middle managers represents a key context setting activity during collective strategy implementation because role conflicts (Floyd & Wooldridge, 2000) and multiple interpretations (Balogun & Johnson, 2004) can arise between managers during implementation. Where top managers attend to clearly articulating role expectations, they are better able to leverage middle manager strategic agency (Mantere, 2008). However, the location and positioning of middle managers within the organisation's hierarchy and specialist functions can impact on this. Boundary spanning middle manager roles linked to customers, suppliers or professionals are in a better position to appreciate strategic issues or problems and exert upward influence (Floyd & Wooldridge, 1997).

In summary, much of the extant literature shows that delivering planned strategy across organisations requires leaders to coordinate and focus collective implementation efforts across different top manager, middle manager and frontline roles (Floyd & Lane, 2000; Jarzabkowski, 2008; Jarzabkowski et al., 2019). This is an intrinsically challenging task because individual managers have diverse (and partial) perspectives, based on differing functional expertise (Denis et al., 2010; Finkelstein et al., 2009), and role positions (Floyd & Lane, 2000) which need to be continually aligned laterally and vertically, to effect consistent patterns of action over time (Jarzabkowski et al., 2019; Mirabeau & Maguire, 2014).

Top and Middle Managers and Healthcare Strategising: Professional Context

The professional nature of healthcare and the extent to which professionals exert power over service delivery are critical contextual factors (Gilmartin & D'Aunno, 2007) that impact on top and middle manager strategising, through the strength of external institutional forces that are brought to bear (Finn et al, 2010), the presence of hybrid managerial roles (Llewellyn, 2001) and inter-professional boundary dynamics (Chreim et al., 2013).

Within healthcare, hybrid managerial roles (Llewellyn, 2001), i.e. those managers skilled in an alternative profession, are central to the distributed leadership arrangements that are in place throughout the sector (Burgess & Currie, 2013; Fitzgerald et al., 2013). Clinical managerial hybrids are now considered pivotal to managing contemporary healthcare services because of their knowledge brokering role, but they influence organisational strategy processes in variable ways (Burgess & Currie, 2013; Currie & Procter, 2005; Doolin, 2002; Llewellyn, 2001), e.g. engaging in resistance (cf. Doolin, 2002), as well as pursuing personal professional interests (cf. Waring & Currie, 2009).

The complexity of inter-professional boundary dynamics in healthcare tends to impede policy change and service innovation efforts (Bucher et al., 2016; Ferlie et al., 2005; Reay & Hinings, 2009). Leaders, therefore, need to engage in boundary work to mediate the tensions that arise between different professional groups during strategising (Chreim et al., 2013). Boundaries represent the distinctions that individuals make to categorise objects, people or practices (Lamont & Molnár, 2002), with boundary work being the tactics individuals and groups use to establish, obscure or dissolve those boundaries (Gieryn, 1983).

Boundaries have particular relevance for coordinating activities across multi-professional teams, because they define the roles individuals and groups participate in (Chreim et al., 2013), for example, defining what constitutes medical and nursing work (Allen, 1997) or what counts as clinical and managerial work (Hotho, 2008). These boundaries are continually negotiated between individuals and groups as they collectively participate in day-to-day service delivery (Allen, 1997) and have varying effects on policy implementation and practice change.

Boundary demarcations can involve defending tasks within professional roles (Abbott, 1981), for example, nurse managers defending nursing activities following the introduction of policies to change their roles (Allen, 2000) or Burri's study (2008) where radiologists claimed jurisdiction of new scanning technologies (e.g. MRI/PET/CT) and their unique expertise in the production and interpretation of images. Conversely, demarcation may serve to relax boundaries, distributing tasks across professional groups, supporting collaboration and coordination of care (Allen, 2009; Llewellyn, 1998; Martin et al., 2009). However, this still involves a level of inter-professional contestation as individuals and groups collectively define the boundaries between their respective roles and tasks (Bucher et al., 2016; Martin et al., 2009). For example, Martin et al. (2009) show that although GPs and hospital-based expert clinical geneticists initially collaborated in responding to policy changes aimed at distributing clinical genetics activities across primary and secondary care. However, subsequent contestation from hospital geneticists about the appropriateness of devolving parts of their role to general practitioners in primary care, resulted in more conservative practice changes than originally intended by the policy.

Primarily, managers need to incorporate an understanding of these issues so that they can establish collaborative boundary practices to develop and sustain patterns of collaboration and coordination across managers, professionals and hybrids to achieve collective service goals (Langley et al., 2019). Beyond this, managers may also need to configure boundaries by continually separating and integrating different groups and ideas, so that certain roles and activities are brought together, at specific times and places, whereas others may be temporarily kept apart or excluded, to ensure coordination of collective goals over time (Langley et al., 2019).

Strategising Practices to Enable Policy Implementation

We use two case illustrations to explain how top managers can use context setting (Burgleman, 1983a; Bower, 1970) and boundary work (Gieryn, 1983) to mediate and overcome tensions linked to implementing strategies to respond to policy imperatives in healthcare. As a brief re-cap of the issues cited earlier in this chapter, healthcare managers need to adopt strategising practices that are participative and:

- set contexts to enable middle manager participation in strategising (Burgelman, 1983b; Currie & Procter, 2005);
- provide opportunities for multi-professional managers to come to a shared collective understanding of issues, beyond their uni-professional perspective (Ferlie et al., 2005; Lockett et al., 2014), and sustain shared understandings over time;

- manage boundary relations and tensions between different professional and managerial groups to support collaboration (Chreim et al., 2013; Langley et al., 2019);
- provide mechanisms to overcome role ambiguity associated with shared leadership contexts (Denis et al., 2010).

Our case illustrations are drawn from a wider empirical study in the English NHS investigating how healthcare managers use strategic practices to implement external policy demands at a large NHS teaching hospital. Our focus was on top and middle manager strategising activities as they responded to a national policy context, centred on improving the quality of care, whilst simultaneously reducing healthcare delivery costs (NHS Five Year Forward View, October 2014; Five Year Forward View, Next Steps, NHS England, March 2017). This policy context comprised three domains of focus, each requiring a specific organisational response: achieving nationally set cost improvement targets; participation in regional clinical service redesign partnerships; and achieving nationally set clinical efficiency targets. In the vignettes below, we focus on two of these domains: cost improvement and clinical efficiency.

We focus upon how top managers leveraged their shared leadership arrangements, by combining context structuring practices (Bower, 1970; Burgelman, 1983a) with boundary work (Gieryn, 1983) to overcome the challenges of coordinating multiple managers with different professional expertise. Context structuring focused on two activities: (1) setting role expectations for different top and middle managers to enact the hospital's response and (2) monitoring implementation progress, linked to the allocated managerial roles, through the hospital's formal committee meeting arrangements. Boundary work (Gieryn, 1983) took the form of three further activities: (1) defining which managers were allocated tasks across top and middle management; (2) defining the location and time that different managers attended monitoring meetings; and (3) framing the form of relations between top and middle managers. The way top managers conducted these practices influenced the depth and breadth of participative strategising (Denis et al., 2007) across the hospital and the extent to which they were able to respond to demands. Figure 7.2 sets out a model, showing the relationship between these practices and policy implementation and will be used to explore our case study. Tables 7.1 and 7.2 contrast the different context setting practices and boundary work we observed across our cases.

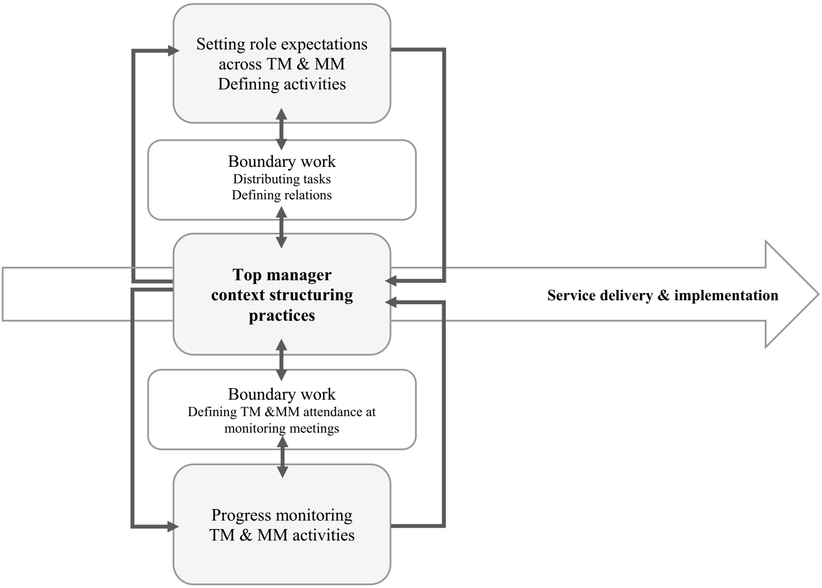

Fig. 7.2 Top manager context structuring practices: enabling policy implementation

Table 7.1 Cross case comparison of TM context setting practices

Case 1: Cost Improvement Standard	*Case 2: Emergency Care Standard*
Context setting practices	**Context setting practices**
Setting role expectations	**Setting role expectations**
Explicitly defining all TM role responsibilities through written project plan	Implicitly defining TM roles via formal managerial position
Explicitly defining all MM responsibilities though written project plan	Inviting middle managers to define local activities to support standard
Performance monitoring	**Performance monitoring**
Consistently monitoring progress of TM activities via face-to-face meetings and interactions biweekly at main TM committee meeting	Consistently monitoring progress of TM activities via face-to-face meetings and interactions biweekly at main TM committee meeting
Consistently monitoring MMs via face-to-face meetings and interactions, biweekly at main TM committee meeting	Intermittent monitoring MM progress indirectly via TM updates at main TM committee meeting
Establishing problem solving meetings between TMs and MMs	Intermittent, occasional monitoring of MM progress via face-to-face meetings at main TM committee meeting

Table 7.2 Cross case comparison of TM boundary work

Case 1: Cost Improvement Standard	*Case 2: Emergency Care Standard*
Boundary practices	**Boundary practices**
Illustrative TM collaborative boundary practices	**Illustrative TM collaborative boundary practices**
Allocating cost improvement delivery tasks to TMs beyond the role of the lead TM lead Allocating tasks to operational managers and clinical directors across hospital's 12 clinical business units Consistently involving middle managers in discussions at TM committee meeting Spending time with operations managers and clinical directors in problem solving meetings outside TM meeting	Allocating tasks to 1 operational manager and 5 clinical directors across 5 clinical business units MMs involved on 5 occasions out of 31 TM discussions about hospital response:
Illustrative TM competitive boundary practices	**Illustrative TM competitive boundary practices**
Maintaining TM only discussions about task delivery and progress at EDG meeting across all phases of cost improvement programme	Excluding middle managers from TM discussions about the standard TM lead maintains and emphasises his personal agency in leading response TM talk about middle managers as subordinates and attending to using hierarchical authority over managers e.g. setting objectives and giving instructions to middle managers

CASE 1: RESPONDING TO COST CONTROL DEMANDS (FIG. 7.3)

In case 1, the hospital needed to meet a nationally imposed cost control standard. At the start of their response, the lead top manager responsible for implementing this standard was the Finance Director. As the project started, the Finance Director discussed the hospital's approach to meeting the standard at the main weekly executive management meeting, involving the hospital's CEO and six other top managers. During one of these discussions, the Finance Director brought a project plan for approval at the meeting. This plan sets out specific roles for each of his executive colleagues and identified the Medical Director as the overall project lead, with him acting as supporting advisory financial expert. This project plan also sets out lead responsibilities for operational managers and clinical directors (middle manager hybrids) in implementing a response

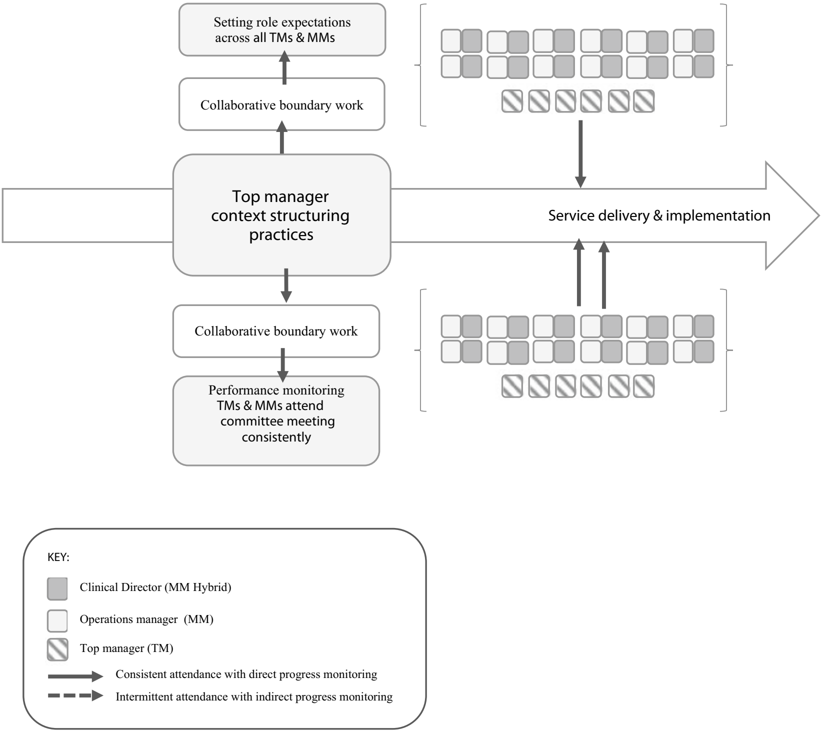

Fig. 7.3 Case 1 Top manager context structuring and boundary work

in each of the hospital's twelve clinical business units. As the project progressed, the top management group restructured their weekly meeting arrangements to include progress monitoring discussions about the cost efficiency standard and planned for middle managers (both operational managers and clinical directors) to attend this meeting to discuss progress with meeting the efficiency standard in their business units.

Top managers and middle managers met on a fortnightly basis to discuss progress, which was maintained for the duration of the project. Top managers defined their relations with middle managers collaboratively, through their project documents and during interactions with each other. When the top and middle managers met to discuss progress, their discussions emphasised a collaborative shared responsibility for meeting the standard. However, the top managers also continued to discuss progress in their executive meetings without the presence of middle managers. When the hospital hit problems with implementing the standard, top managers' problem solved collectively at their executive management meeting and identified additional activities to overcome the issues.

The top management group maintained their focus on collectively monitoring middle and top manager activities, linked to their assigned roles. They also held separate problem solving meetings with the business unit middle manager leads. In this case, we found that the hospital met the cost efficiency standard for the end of the financial year.

Case 2: Responding to Clinical Efficiency Demands (Fig. 7.4)

In case 2, the hospital needed to meet a nationally imposed clinical efficiency standard. At the start of the response, the lead top manager responsible for implementing this standard was the Operations Director. The Operations Director approached implementing the hospital response by taking over direct management and leadership of the hospital's response to the standard from his subordinate managers. As the project started, the Operations Director discussed the hospital's approach to meeting the standard at the main weekly executive management meeting, involving the hospital's CEO and six other top managers.

However, in this case, the Operations Director focused on an update of the activities he was conducting to lead the hospital's response and updated his top manager colleagues about the middle managers to whom he had delegated tasks. This included one general manager and four clinical directors (hybrid, medically qualified managers).

As the project progressed, the top management group continued to discuss progress at their weekly management meeting on a fortnightly basis, but primarily without the involvement of middle managers. Although the Operations Director had delegated tasks to five middle managers, only two of these managers were invited to attend the executive management meeting and they only attended on a total of five occasions throughout the nine-month project. Top managers defined their relations with middle managers hierarchically when they discussed project progress.

When the hospital hit problems with implementing the standard, top managers attempted to problem solve collectively at their executive

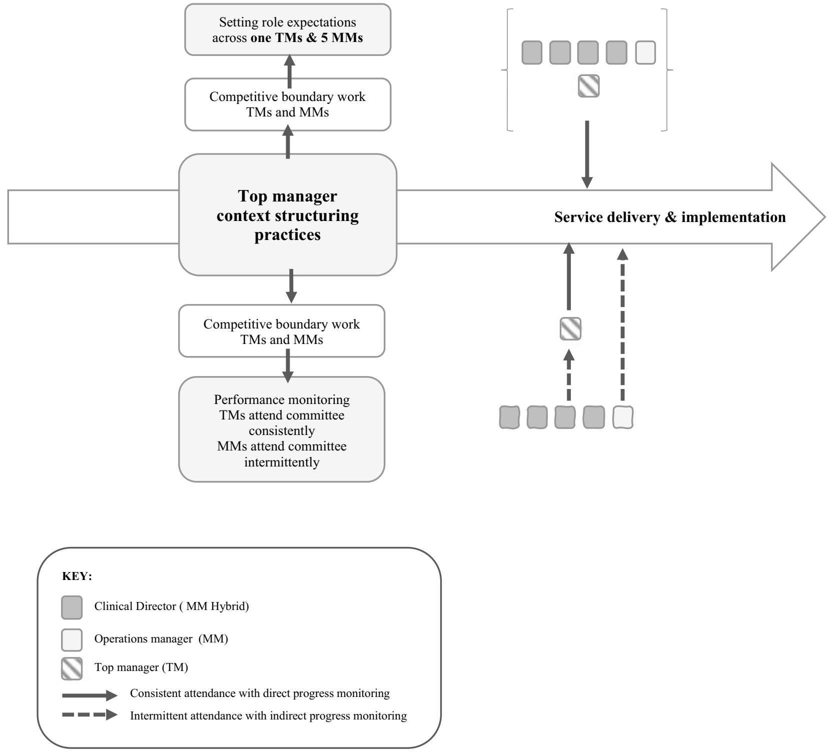

Fig. 7.4 Case 2 Top manager context structuring and boundary work

management meeting; however, the Operations Director continued to emphasise the need to maintain his response, rather than identify new action. The five identified middle manager leads were left to develop their own plans and did not participate in problem solving discussions with top managers.

Whilst the top management group continued to attend to monitoring the Operations Director's progress with implementing the hospital response at their weekly meetings, they did not attend to directly monitoring the activities of middle managers who had been assigned roles in the response. These middle managers were left to define and develop their own plans according to their local business units' interests and professional expertise. In this case, we found that the hospital did not meet the clinical efficiency standard.

These case illustrations show that top managers need to integrate context setting practices, with collaborative boundary work (Langley et al., 2019) to effect top-down policy implementation. Langley et al. (2019, p. 707) make a distinction between competitive boundary work, where people raise boundaries to protect territory and exclude others, in contrast to "collaborative boundary work where boundaries between groups are aligned and downplayed to support meeting collective goals". In case one, we see that the top managers context setting activities (Fig. 7.3, Table 7.1) focused on: (1) explicitly setting expectations about responding to the cost improvement standard by articulating roles for top managers and middle managers across the hospital's business units and putting in place a formally documented project plan which was approved at the weekly executive management meeting; and (2) putting in place a biweekly face-to-face performance monitoring schedule at the main the weekly management meeting, to track progress with the different top and middle manager roles and activities during response implementation.

In case 1 (Fig. 7.3, Table 7.2), the lead top manager used collaborative boundary practices that involved his top manager and middle manager colleagues in supporting the hospital response by: (1) extending responsibilities beyond his professional role to his executive colleagues and middle managers, including clinical hybrids; (2) ensuring they participated in the biweekly performance monitoring discussions and creating joint problem solving meetings; and (3) using language that emphasised the collaborative nature of top and middle activities. The combined context setting and boundary practices supported collective collaboration between different top managers (i.e. Finance Director, Nurse Director and Medical Director) and wider middle manager actors (Langley et al., 2019). These supported regular information exchange (Raes et al., 2011) between top management and the different operational and clinical director leaders in the hospital's business units and prevented divergence of role expectations between different top and middle managements activities (Floyd & Wooldridge, 2000).

In case two (Fig. 7.4, Table 7.1), top manager context setting was different. Here, top managers set the context by positioning the executive lead as the principal manager overseeing and enacting the hospital response. He defined his activities implicitly within his general remit as the hospital's Operations Director role. Although he delegated implementation activities to five middle managers to support his role, these were also implicitly and informally defined through their managerial positions within the hospital. Middle managers were left to define the business unit activities needed to support meeting the standard.

As with case 1, implementation progress monitoring was structured into the weekly executive management meeting; however, this focused on directly monitoring the Operations Director's individual leadership activities, whilst indirectly monitoring middle manager activities, via his verbal updates. In this case, boundary setting (Table 7.2) was also different. Whilst we saw some evidence of collaborative boundary practices through the extension of role responsibilities to five middle managers, this co-existed with the following competitive boundary practices: (1) the Operations Director defended the boundary around his role in responding and excluding his executive colleagues from participating in the response; (2) the top management group excluded middle managers from the majority of biweekly performance monitoring discussions; and (3) top managers used language that emphasised middle managers as subordinates in enacting the hospital's response. This combination of context setting and competitive boundary work made it harder for top and middle manager to keep their activities associated with their roles aligned.

In summary, setting implicit roles expectations led to role ambiguity (Denis et al., 2010) between various top and middle manager actors, whilst competitive boundary practices by top managers limited the opportunities for top and middle management actors to consistently come together to exchange information about their respective implementation activities (Raes et al., 2011). This led to divergence between top manager and middle manager role expectations (Floyd & Wooldridge, 2000), impeding their policy implementation efforts.

IMPLICATIONS FOR PRACTICE

In this chapter, we have considered the leadership practices necessary to implement healthcare policy imperatives. The complexity of healthcare's stakeholder landscape represents a critical factor that managers leading and working in delivering healthcare services need to acknowledge. Leaders and managers need to develop participative managerial practices that can accommodate this context and its associated tensions. This primarily centres on designing services and change programmes that leverage the distributed leadership arrangements (Currie & Lockett, 2011; Denis et al., 2012) common to healthcare through the effective application of participative strategising practices (Denis et al., 2007). The academic literature across public sector healthcare and more commercial settings shows us that healthcare leaders and managers need to attend to:

- How they set the context for organisational action (Burgelman, 1983a, 1994; Noda & Bower, 1996; Pettigrew, 1992), across top and middle management levels, bearing in mind that this may not always be enabling and can have unanticipated effects. Top managers play a particularly important role in setting organisational action contexts and need to continuously review and reflect on the extent to which their different context setting activities (e.g. planning, resource allocation, control systems and role expectations) are impacting on middle management action.
- Actively managing boundary relations and tensions across different managerial and professional groups, paying particular attention to boundary work that supports collaboration (Langley et al., 2019). Leaders need to recognise that time for this needs to be built into implementation activities, and needs to include consistent opportunities for meetings between different professional and managerial actors to support shared understandings about situations, roles and activities over time.

Through an exemplary case study, we have focused on two particular context setting activities, role expectation setting and progress monitoring, to show the way these practices interact with top manager boundary practices, and the effects this has on implementing policy imperatives.

Delivering healthcare services, in such complicated stakeholder landscapes is always a challenging activity for healthcare leaders and managers. However, by continually attending to and reflecting on how they configure context setting and boundary work, leaders can support clinicians and managers to navigate these demanding healthcare relations more effectively, enabling multi-professional collaborative approaches that assist policy implementation and service development.

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CHAPTER 8

The Role of Staff Managers in Service Transformation

Giovanni Radaelli

INTRODUCTION

Integrating care delivery across departments, specialisms and organizations is a crucial antecedent to the delivery of high quality, affordable and equitable healthcare. Greater collaboration and coordination between care providers operating within and between organizations is essential to eliminate unnecessary activities and to make superior decisions—which would in turn reduce financial and environmental wastes while increasing employees' and patients' welfare (Baxter et al., 2018; Deneckere et al., 2012).

Creating a sustainable healthcare system requires an effort to integrate care within hospitals, i.e. between specialisms and departments, as a large portion of NHS activities are located in secondary care. This effort is considerable. Integrated care needs to mobilize multidisciplinary knowledge, skills and abilities; increase efficiency by bringing resources and

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processes closer to each other; increase patient safety by reducing the prevalence and complexity of hand-overs (Baxter et al., 2018; Struckmann et al., 2018).

The design and implementation of integrated care within hospitals is traditionally understood as a strategic transformation that is facilitated by executive managers and an operational transformation 'on the ground' that involves the collaboration between clinical professionals (Auschra, 2018; Raus et al., 2020; Zonneveld et al., 2018). Studies informed by the sociology of professions have long evidenced that service innovations are heavily mediated by clinical professionals (e.g. doctors and nurses), who possess the key knowledge of what services to integrate, with whom, and how—and thus control the core occupational jurisdictions of medicine (Abbott, 2014; Currie et al., 2012; Llewellyn, 2001; Lockett et al., 2014; Reay et al., 2006; Von Nordenflycht, 2010).

Collaboration between clinical professionals is far from obvious in the context of integrated care within hospitals. Integrated care might drastically change the practices and boundaries of clinical professionals; institutionalize new ways to produce and share knowledge; and concede significant portions of their jurisdictions and autonomy to others (Finn et al., 2010; Jolanki et al., 2017; Liberati et al., 2016). Executive and line managers, in this context, seek to facilitate collaboration between clinical professionals, but cannot fully enact their hierarchical authority to push change (Ferlie et al., 2005; Freidson, 1988; Von Nordenflycht, 2010).

In a debate dominated by the role of clinical professionals and executive managers, the role of staff managers (e.g. quality managers, operations managers and innovation managers) is almost forgotten (Jabbour et al., 2018; Radaelli et al., 2017; Raus et al., 2020). Past studies are openly sceptical about the significance of staff managers in radical changes such integrated care. Staff managers face an even greater struggle as they lack the organizational status of executive managers, as well as the professional knowledge to engage in a 'full' conversation with clinicians.

Staff managers (e.g. quality, operations, HR and IT managers) are generally believed to occupy a limited role during processes of professional change, acting mostly as technical support. Clinicians can quickly marginalize staff managers as soon as they are perceived to be a threat to professional autonomy or to the quality of clinical services (cf. Risi & Wickert, 2017). In short, staff managers seem unlikely to provide the desired organizational support unless they ally with core professional workers (DiBenigno, 2020; Howard-Grenville, 2007). Such scepticism has built into a popular (and sometimes populist) view that healthcare systems should cut the numbers of managers, in order to reduce managerial costs and become financially sustainable.

Against these speculations, this chapter argues that we need a more nuanced understanding of the role of staff managers during processes of integrated care. Specifically, this chapter asks: what role can staff managers, such as quality managers, have in these radical reconfigurations? If any, how do they engage (possibly reluctant) clinical professionals in a collaboration?

The first part of this chapter establishes the theoretical foundations of the analysis. It will show how integrated care is (also) a problem of jurisdictional negotiation between clinical professions. The jurisdictional implications of integrating care within a hospital setting sets the tone for sceptical expectations regarding the facilitating role of staff managers, who might appear ill-equipped to provide a vigorous organizational support. The second part of the chapter describes the actual experience of the staff managers, who in fact subverted those negative expectations. Why and how they succeeded in supporting integrated care represent the two key takeaways of this chapter.

Integrated Care Within Hospitals: A Jurisdictional Challenge Among Clinical Professionals

Hospitals' structure can be sliced into disciplinary specialisms (e.g. cardiology, neurology and oncology), which form different, and often separate, clinical units and departments. The relationship between clinical departments is often one of competition (e.g. access to resources from the executive board) more than synergy and collaboration (Comeau-Vallée & Langley, 2020; Hajek, 2013; Liberati et al., 2016; Raus et al., 2020). Clinical departments have historically operated as 'clinical silos', each managing separate cohorts of patients.

Sometimes, compartmentalized care is not controversial. Certain diseases and patient cases delineate neat professional boundaries which only a specific discipline and specific experts should attend. Cardiologists, for instance, have clear and distinctive responsibilities regarding diagnosing and managing heart problems—a professional jurisdiction that other clinicians (e.g. neurologists) would not contest. The latter would focus on 'their patients' rather than intrude with heart surgery.

Clinical silos, however, struggle to cope with highly complex patient cases. Patients with co-morbidities, for instance, are afflicted by multiple organ failures at once (e.g. liver failure, neurological disorders and geriatric conditions) and need an integrated approach, i.e. different specialists need to manage the patient simultaneously. Sometimes, the transition towards integrated care has proven smooth. Oncology and palliative care, for instance, have developed several examples of integrated care, as patients' co-morbidities demand multidisciplinary teamwork and shared decision-making (Hui & Bruera, 2015).

More often, the development of integrated care is a more contentious negotiation of new professional jurisdictions. Integrated care allows clinical groups to expand their jurisdictions by acquiring influence in new tasks and new responsibilities; but also restrict their autonomy as others would 'intrude' in their decision-making and use their resources. Clinical groups might be highly reluctant to pursue such radical revision of their practice and jurisdictions, because of concerns about resource access and autonomy and (often primarily) concerns about the resulting quality and safety of patient care.

In these circumstances, clinical professionals carefully guard their jurisdictions against the perceived 'intrusion' of non-experts, using three main actions (Currie et al., 2012; Liberati et al., 2016; Radaelli et al., 2017; Von Nordenflycht, 2010). First, they can affirm the interests of their patients as priority above any other interest. Integrated care is often informed by a melange of competing interests (e.g. quality, safety and efficiency), which might reduce access to resources and reduce decision-making autonomy. In this case, clinicians might use their trusteeship norms and ethical codes to prohibit re-organizations and process re-designs—claiming that these would compromise the interest of their patients.

For instance, surgeons might antagonize a revision of surgical practices that requires sharing machinery with other clinical groups or reducing the number or types of scalpels for efficiency purposes. In doing so, surgeons can claim that such resource redesign would compromise patient safety and accessibility and ultimately compromise trust relations with their patients.

Clinicians can also affirm the primacy of their professional knowledge above others (Abbott, 2014; Freidson, 1988). For example, each clinical group can claim they know ‘more’ what is ‘best for the patient’ than the others—and thus try to impose their perspective on a given topic. Conversations about integrated care are not performed *inter pares*—even when a new integrated service aims to level the fields. Rather, the negotiations reflect pre-existing hierarchies that exist between disciplines (e.g. acute specialisms tend to bear more influence than mental health in emergency services), departments (e.g. internationally recognized centres might bear more influence than others), roles (e.g. psychiatrists versus psychologists and psychotherapists) and individual experience/specializations. As a result, integrated care negotiations combine a scientific mobilization of knowledge with political and interpersonal dynamics—where the knowledge of some team members is perceived more important than others.

Finally, clinicians can make the quality of their decisions ‘opaque’ to non-experts, in order to prevent and circumvent assessments (Von Nordenflycht, 2010). Not only do professionals claim they know ‘more’; they can also claim to know something ‘different’ and ‘inaccessible’ to others—who lack the necessary qualification to judge the quality of decisions and performance.

Professional resistance to hetero-directed changes has long proven to be highly effective (Currie et al., 2012; Llewellyn, 2001; Liberati et al., 2016; McNulty & Ferlie, 2004; Muzio et al., 2013; Radaelli et al., 2017; Von Nordenflycht, 2010). Integrated care projects have been able to overcome such reluctance when (i) the superior benefits of integrated care had been tested and proven already in other hospitals, thus rendering the status quo obsolete; (ii) the incumbent professional groups were not undermined, but indulged and supported, e.g. expanding access to resources, clinical influence and managerial freedom; (iii) internal failures rendered the status quo unacceptable (cf. Greenhalgh et al., 2008; Greenwood & Suddaby, 2002; Lockett et al., 2014; Radaelli et al., 2017). In these three scenarios, integrated care is framed as consistent with clinicians’ trusteeship norms and ethics codes (e.g. claiming how not integrating practices would lead to inferior outcomes); as an opportunity to apply expert knowledge into a new service (e.g. overcoming constraints and shortcomings that clinicians have inherited from past management); and as an opportunity to expand their influence on other professional jurisdictions, re-establishing autonomy against managerial intrusion (e.g. a revised practice could terminate the managerial audits after an internal failure).

The Role of Staff Managers: Expectations from the Sociology of Professions

The negotiation of new professional jurisdictions through integrated care is most frequently done by different groups of clinical professionals, with limited involvement of managers (Comeau-Vallée & Langley, 2020; Liberati et al., 2016; Radaelli et al., 2017; cf. Ferlie et al., 2005). Managers are expected to play a subordinate role at best, as they do not possess relevant disciplinary knowledge, pursue different interests and goals, and speak similar languages (Currie et al., 2012; Kellogg, 2009; Llewellyn, 2001; McNulty & Ferlie, 2004). Accordingly, managers are often represented as 'intruders' in professional jurisdictions and as a source of risk to patient safety. Scepticism over the motivations and abilities of managers to participate in radical revisions of clinical practices starts from executive managers, often perceived as bearers of organizational interests over patient ones (Von Nordenflycht, 2010) and too distant from practice 'on the ground'. Such scepticism extends and expands to staff managers, e.g. quality managers, CSR managers, HR managers, operations managers, innovation managers (and more).

The sociology of professions has often described staff managers as *organizational professionals* who specialize in organizational themes (e.g. quality, safety, operations, innovation or finance) in support to *core occupational professionals* like doctors, surgeons and nurses, who instead focus on key products and services that directly add value to patients (Evetts, 2006; Muzio et al., 2013; Risi & Wickert, 2017; Suddaby & Viale, 2011; Von Nordenflycht, 2010). Organizational professionals are often regarded as 'peripheral experts' (DiBenigno, 2020) in the core jurisdictional domains occupied by occupational professionals. HR managers, for instance, are key thematic experts when it comes to general organizational frameworks related to payrolls, incentives and staffing, but need to devolve core responsibilities to senior clinicians when it comes to the actual day-to-day management of personnel (McDermott et al., 2015). HR managers, to put it differently, would not know when clinicians are doing their job appropriately, so they would not know when to apply specific incentives or sanctions.

As noted earlier, clinicians can use their expert knowledge to render the quality of their work 'opaque' to managers, and easily circumvent any attempt to intrude in own their practice (Currie et al., 2012; Radaelli et al., 2017; Von Nordenflycht, 2010). It follows that organizational professionals might be entirely replaced by clinicians in their own domain (cf. Risi & Wickert, 2017). The case of quality managers and operations managers is especially enlightening as their own organizational jurisdiction (i.e. designing processes and pathways, monitoring the consumption of resources, scheduling tasks and resources) is largely taken up by clinicians (e.g. Johnston et al., 2018). Current literature is indeed suggesting that 'hybrid' managers, i.e. managers with a clinical background, could replace generalist managers (Burgess & Currie, 2013; Fitzgerald et al., 2013; Kislov et al., 2016; Llewellyn, 2001).

With such an unbalanced relationship, it could be expected that staff managers would not get involved in projects of integrated care, be actively rejected or marginalized by clinical groups and/or remain focused only on their technical jurisdiction.

The Role of Organizational Professionals: Evidence from Four Cases of Integrated Care

We tested these expectations in four cases of integrated care, paying attention to the role played by quality managers, operations managers and innovation managers. Cicero, Green, Gamma and Psyche (cf. Table 8.1) each experienced a large-scale programme of integrated care, requiring multiple clinical groups to concede part of their jurisdictions to others and take up new tasks and responsibilities.

Cicero and Green engaged in two programmes of intra-organizational integrated care pathways. The programmes aimed to replace care protocols (historically developed by clinical units in isolation from others and usually protected from external scrutiny) with integrated care pathways developed by multidisciplinary teams across clinical units. For instance, both Cicero and Green modernized their stroke services, based on care pathways jointly developed by Neurology, Oncology, Radiotherapy and Endocrinology.

Gamma engaged in the integration of separate information systems into a shared patient portal and record. The hospital had experienced the proliferation of different information systems and different practices of recording information. Knowledge mobilization across clinical departments had been suboptimal for years as each struggled to share and retrieve patient files "*even from departments next door*". Gamma thus engaged in a cross-department ("*whole-system*") project to unify the local knowledge systems.

Table 8.1 Overview of cases

Hospital	*Data*	*Service integration*	*Actors involved*	*Outcome*
Cicero	• 21 Interviews • 5 Care Centre Events • 8 ICP Team Meetings • 25 ICP Documents • 5 Full day observations	Development of new integrated services across clinical units, with writing of explicit integrated care pathways (ICPs) Development of an overall system to coordinate ICPs	Medical consultants, lead nurses from multiple acute departments *Quality manager* Medical director	Design of 19 integrated services Diffusion of ICPs across clinical units New structure in cross-functional Care Centres
Green	• 8 Interviews • 4 Strategic Meetings • 4 ICP Workshops • 14 ICP Documents • 2 Half-day observations	Development of new integrated services across clinical units, with writing of explicit integrated care pathways (ICPs)	Medical consultants, lead nurses from multiple acute departments *Quality manager* Medical director	Design of 8 integrated services Diffusion of ICPs across clinical units
Gamma	• 87 Interviews • 42 Team Meetings and Implementation Events • 50 Full day observations • 40-hour work shadowing • 26 instruction/ promotion videos • 25 implementation documents • 2 ICP Workshops (notes, minutes)	Development and implementation of an integrated medical patient record, with substitution of local practices and redesign of information flows	Medical consultants, junior doctors, lead nurses, nurses from multiple acute departments *Operations improvement manager* IT managers Executive board (CEO, CIO, COO)	Redesign of patient information flows Design and implementation of integrated medical patient record Design of collaborative practices across clinical units

(continued)

Table 8.1 (continued)

Hospital	*Data*	*Service integration*	*Actors involved*	*Outcome*
Psyche	• 32 Interviews • 35 Team Meetings • 13 Training and Promotion Events • 11 design & implementation documents	Design and implementation of new integrated service liaising mental health specialists (from Hospital X) with acute specialists (from Hospitals Y and Z) to manage patients with acute pain from psychological distress	Mental health specialists from Hospital X Acute specialists (medical consultants, junior doctors, lead nurses) from multiple acute departments in Hospital Y *Innovation manager from Hospital X*	Design of new integrated service across clinical units and hospitals "Innovation award" in Hospital Y for best new service

Finally, Psyche (an English hospital) developed a new integrated service for patients with intense psychosomatic pain. The Psyche project involved the integration between mental health unit (which, in turn, included, psychologists, psychiatrists and psychotherapists) and acute specialisms. The new service demanded acute departments to refer patients with intense psychosomatic factors to the mental health unit and invited joint treatment. Table 8.1 provides a brief summary of the four cases.

The managers involved in these four projects were all characterized by a business rather than clinical education, lack of hierarchical influence and limited status in the organization. Their 'limited status' was frequently implied by clinical informants during fieldwork; noticeably, it was explicitly understood by the managers themselves. An innovation manager in Psyche, for instance, acknowledged they were "*responsible for creating support towards innovation, like collecting information about new grants, study eligibility rules, and helping with documentation. We do not make decisions on what constitutes an 'appropriate' innovation*". Cicero's quality manager similarly argued that "*we implement the executive mandate to design and promote a quality system. The real quality, however, is managed within the units*". And Gamma's operations manager noted: "*Doctors and surgeons are the key operations managers making decisions on resources,* *tasks, and services to deliver for each category of patient. We provide an organizational framework to them*".

Managers' limited status was confirmed by their initial exclusion from their projects. Each manager was not considered 'necessary' for the project. Executive managers and senior consultants made key decisions about the composition of the programme/project teams and generally agreed that the tasks of these staff managers could be performed by clinical experts instead. The initial exclusion of the operations managers from Gamma, for instance, was justified by saying that "*patient workflows wouldn't be redesigned by an operation manager, but by doctors and nurses who actually have an experience managing those cases*" (Chief Operating Officer, Gamma).

Without their presence, however, the projects stalled—as conversations across the clinical units stalled. The clinical informants cited three major barriers. First, they did not have enough time to dedicate on the service innovation, as the routine clinical work demanded constant and intense engagement. Doing "*integrated care properly means we need to spend proper time on it, but time is the scarcest resource with our caseload. We are perennially short-staffed*" (Medical Consultant #1, Cicero). Second, they lacked urgency. Integrated care was important, and very rarely contested by clinicians from a theoretical standpoint. Still, it was often not deemed necessary or a priority "here and now". Their services "*are performing really well right now, so we might not want to jeopardize that in the near future*" (Medical Consultant #1, Gamma). Third, they had concerns about the organizational implications of integrated care. Sharing decisions and resources with others meant reducing the space of autonomy, especially economically, e.g. "*it is not clear how central resources will be distributed locally once the service-unit-patient link is not straightforward*" (Medical Consultant #2, Cicero). Also, integrated care means "*opening up our practices to others' scrutiny, and some are exploiting this opportunity*" (Medical Consultant #1, Cicero). Working multi-disciplinarily *"is not an innocuous happy-go-lucky thing, but has serious repercussions on the number of patients and resources that groups will receive, and on patient outcomes*" (Lead Nurse, Gamma). It was noted that "*good, compartmentalized care is better than bad integrated care; if you do not trust the motivations and the skills of the other units, it is safer to keep doing what you are doing*" (Acute Specialist #1, Psyche).

These gaps represented an opportunity for organizational professionals to establish their presence and build their contribution.

Opportunity #1: Scut Work to Release Burden from Clinicians

Faced with increasing evidence that their projects were stalling, clinical groups asked the involvement of organizational professionals to provide them with some technical assistance—somebody to “*release us from some burden and help us concentrate on the clinical aspects*” (Medical Consultant #2, Gamma). The integrated care projects required a lot of scut work, especially around the organization of meetings, the elaboration of documents and artefacts and the preparation of communication. While these tasks were necessary in practice, they “*take away a lot of time and make you lose your focus on the more important stuff*” (Medical Consultant #1, Green). These activities presented little attraction to medical experts. Scut work can be defined as work “performed in the treatment of patients that could otherwise be carried out by ancillary or paraprofessional personnel” (Schwartz et al., 1992, pp. 778–779) or work “the professional is observed doing that is either physically, socially, or morally difficult work [and] audiences that see them [ineffective] will question their status as experts” (Huising, 2015, p. 267). Tasks like taking meeting notes, writing up the minutes, scheduling meetings, inputting data in administrative clinical software, organizing communication events, arranging slides—and many more—presented little appeal to medical consultants in particular. They would normally delegate such work inside their own unit (e.g. to secretaries or junior staff). However, these “*little things accumulate into a mountain*” (Psychiatrist #1, Psyche) and were becoming unsustainable for the unit as well.

Across the four cases, the staff managers were quite happy to appropriate such scut work, as it allowed them to “*put a foot in the door*” and join the project proceedings “*one way or another*”. They labelled themselves as “*supporting cast*”, “*clerical workers*”, “*technical support*” or “*helping hand*” to motivate their presence during project proceedings and to appropriate scut work. By doing so, the staff managers had an easy way to convince the clinical units that they “*had to regularly attend their meetings – otherwise, how could we organize the minutes?*” (Innovation Manager #2, Psyche). Similarly, they increased their presence in most research activities, workshops and communication events, from which they had been thus far kept away. By making scut work “*invisible*” to healthcare professionals, these managers had become legitimate and even indispensable project members.

> We won over doctors with our backstage work around documentation, organizing meetings, collecting data. Doctors really appreciated our efforts because their time was well spent, meetings were organized, and our data collection enabled them to see the results of teamwork. I found out that they referred to [my colleague] as "our disc jockey" because during meetings s/he was at the keyboards mixing data, finding papers. (Quality Manager, Green)

Opportunity #2: Expert Work to Expand Organizational Knowledge

Project proceedings became a forum for the staff managers to display their expertise. The managers used their tacit and expert knowledge about organizational processes and frameworks, thus adding value to doctors' decision-making. Each staff manager was keen to show how their knowledge was complementary and not alternative to doctors' and nurses'. For instance, the operations managers in Gamma did not compare their understanding of organizational processes and resources with clinicians'. Rather, they emphasized how their peculiar organizational position and experience allowed a unique perspective on change. Gamma's Operations Manager #1, for instance, noted that "*we are like frogs jumping from pond to pond… while they are more fish diving into deep water*". As a result, operations managers could provide insights into what other clinical units and departments were doing at the time—while clinicians specialized on their disciplines.

Another operation manager in Gamma similarly noted that: "*we look at operational problems 'from above' while they look at them from the ground. We know what's happening across every department, but our data is superficial; they have an in-depth knowledge of their operation, but they only know what happens in their own unit. We complement each other*" (Operations Manager #2, Gamma). Furthermore, "*doctors have a deep knowledge of their processes and resources, but only use medical frameworks. They are often entirely unaware of ideas from Lean, Six Sigma or theory of constraints that come from 'our' literature. Again, we complement each other*" (Operations Manager #2, Gamma).

Such added value was quickly recognized and mobilized by the clinical units. Clinicians generally acknowledged that they "*could use a different set of glasses*" for integrated care. Rather than claim a priori they "knew better" than others, clinicians demonstrated flexibility and open-mindedness—especially to "*exotic*" and "*exoteric*" ideas coming from their staff managers. It was frequently noted how "*our understanding of processes and resources mostly comes by our medical upbringing, especially what we have learned in the medical school, our mentors and our own clinical observations*" (Medical Consultant #3, Cicero). This "*was evidently only part of the whole story*" and might have "*caused mistakes and errors that we could have prevented*" (ibid.). So, clinicians were "*curious to hear if we've missed something. We've focused so much on our knowledge that we might be missing something from sociologists, business people, and whoever is talking about integrated care*" (Medical Consultant #4, Gamma).

Self-aware of their knowledge limitations, clinicians recognized the value of staff managers' knowledge and used it as a resource to overcome their inertia.

In Gamma, for instance, the operations managers contributed to a significant advancement in workflow redesign by applying their knowledge of the 'theory of constraints'. Here, two clinical units were fighting over a redistribution of tasks to increase service quality and speed. One unit complained about the delays generated by the other unit and suggested ways to sanction the other 'sluggish' unit.

> Their complaint was 'we are doing ok, but our beds are occupied by patients who should move to the next ward. They are however slow and keep asking us to wait and wait. So we cannot accept new patients'. The other unit complained they were short-staffed and were doing already too much, so it was unfair to ask to speed up, when that could mean putting patients at risk. (Operations Manager #1, Gamma)

The operations managers did not offer an alternative solution. Rather they helped theorize the problem in ways that the two clinical units could review their proposals on their own, "*with a sounder understanding of the reasons for the delays*" (Operations Manager #1, Gamma). The operations manager drew a graph showing the 'virtuous' unit as the supplier of the 'sluggish' unit, calculated the cycle times for each and calculated the 'work-in-progress' being accumulated every week. These calculations (and the 'theory of constraints' as a whole) were unknown to the clinicians but quickly resonated with them. The leading operations manager pointed out how "*local optimization had led to global disasters… you're actually going too quickly while they are overworked. You need to rethink the workload*". As a result, the complaining unit accepted to (i) appropriate a number of tasks from the 'sluggish' unit to help levelling their cycle times;

(ii) share a nurse (now known informally as a liaison nurse). This was seemingly enough to synchronize the two units and reduce both delays and capacity issues. Overall, the experience was a "*smash hit*" because "*we were damn right. They're doctors, so they know the value of good theory. Once they understand we have method, they go 'oh, they actually know what they're doing!*".

Staff managers in each case found a niche for themselves, either providing a theoretical abstraction of the negotiations between clinical groups (as reported below) or using their experience to "*add flavour and put things in perspective*" (Psychologist #1, Psyche). Psyche's Innovation manager #1, for instance, had a long and fruitful experience with grant applications—especially with a funder that the multidisciplinary team had spontaneously decided to target. The innovation manager could easily 'sell' her experience as a valuable resource for the team, so clinicians would "*listen to her to increase our chances of winning that money*" (Psychotherapist #1, Psyche).

Overall, the collaboration between clinical experts and staff managers was not unilaterally dominated by clinicians. Clinicians emphasized the primacy of their specialist knowledge in the clinical domain and did not allow staff managers to make any decision on their own. At the same time, clinicians also accepted the limitations of their professional knowledge and absorbed staff managers' knowledge to inform or complement their decisions. Clinicians made the active effort to interpret and incorporate the knowledge of their technical managers. A comment from a senior consultant was especially enlightening:

> We have a reputation as hostile to managers, but it's more how things have been presented to us. If you're trying to convince us a patient is like a car, we have a problem. But I do think most of us have a feeling we could learn better ways to manage our processes. We are a curious bunch; after all, we have a scientific background, and a habit to learn new things. (Medical Consultant #4, Cicero)

It is worth noticing how this collaborative and absorptive dynamic were not obvious. The sociology of professions has often emphasized the epistemic difference between managers and professionals as almost-insurmountable communication barriers. Clinicians, it has been argued, might work more and better with hybrid managers, who possess professional knowledge on top of their managerial intent. The four cases highlight how much clinicians found specific and special value in staff managers' epistemic difference, even in their lack of professional knowledge. The staff managers were effectively thinking 'outside of the professional box' so they could provide non-redundant knowledge matured in other universities, hospitals and industries. Sensing that clinicians had genuine curiosity towards their knowledge, the staff managers built a theoretical role for themselves, providing their interpretation to problems and solutions that doctors and nurses discussed in a more experiential and practice way.

Opportunity #3: Diplomatic Work to Mediate Professional Conflicts

The aforementioned 'theory of constraint' vignette is exemplary of how much the clinical units were comfortable with the presence of the operations managers, even during jurisdictional conflicts. Staff managers were not simply 'spectators', but carefully participated in these discussions as well. Across the four cases, clinicians did not perceive their staff managers as any threat to their jurisdictions. Clinicians knew that "*eventually we're the ones making the decisions. They wouldn't dare sticking their nose where they shouldn't*" (Medical Consultant #2, Green). Clinicians heavily implied (if not explicitly noted) they could easily rebuke any excess from staff managers ("*they can be easily handled*"). Staff managers were understood as organizational and technical experts, who could add an alternative perspective but could not (and would not) push any further.

The staff managers embraced their low status as very advantageous because it allowed them to reach clinical practice "*deeper than our execs could even dream of*" (Quality Manager #1, Green). As noted, they carefully represented themselves as "supporting cast", "clerical workers", "technical support" or "helping hand" to prevent any concern they would try to impose decisions or meddle with the clinicians. This sent the message that "*we are not the armed wing of the executive board*" (Operations Manager #1, Gamma).

> We're not delusional. We know that we can never tell a clinical unit what to do, when and how. Their knowledge and experience with the literature and frontline is something we cannot replicate, unless we spend years of training; they can probably learn our skills quicker than we can ever learn theirs. So, it's truly an issue of understanding what our place in the hospital is, and make the most out of it. (Innovation Manager, Psyche)

The conversations between clinicians and staff managers largely benefitted from this shared understanding. Staff managers became desirable third-parties to mediate jurisdictional conversations between clinical groups because they provide valuable technical knowledge and an impartial perspective, without posing any jurisdictional threat on their own. After all, the staff managers were not expected to act as judges delivering a verdict. Rather, they were expected to provide additional data and perspectives that could help frame the conversations among clinical units. As a Cicero's nurse noted: "*multidisciplinary conversations are often tainted by the 'politics' between the clinical groups. There's plenty of reservations and apprehension, even when groups almost trust each other. [Our quality managers] are so far away from all of this, they provide a semblance of objectivity*". Almost paradoxically, clinicians perceived the intervention of quality, operations and innovation managers, as a way to reduce the influence of the opposing clinicians—the latter having instead a lot of power and influence to impose a decision upon them.

> Professional group would apply their guidelines like 'gospels', saying "It's all written here", which meant: "you follow my lead"… They overcome the impasse; we proposed an independent, evidence-based methodology to merge guidelines. They liked it because it kept us away from the clinical merit of guidelines; while our endorsement allowed doctors not picking something developed by others and prevent others to get in pole position. (Quality Manager, Green)

Quality, operations, and innovation managers had eventually become *diplomats* to help overcome jurisdictional conflicts. The notion of staff managers (and middle managers more generally) as diplomats is not new to the literature (Radaelli & Sitton-Kent, 2016; Wooldridge et al., 2008). While past research has mostly highlighted staff/middle managers' capacity to mediate the relationship between top managers and clinicians (i.e. staff managers as 'ambassadors' of the executive board), our cases showed direct mediation between clinical groups. Put it differently, clinical groups used staff managers in their own conversations with other clinical groups. Quality, operations and innovation managers would not act as 'ambassadors' (as this would breach their value as 'impartial' actors), but as 'translators'. More specifically: the staff managers would help interpret local narratives and discourses by providing a third, neutral, framework of reference.

This was especially evident in Psyche, where the clinical groups often had competing ideas about the new service, e.g. where to test it and then how to scale it up. These disputes occurred against the backdrop of project deadlines from an external funder, so they had to be solved relatively quickly. The clinicians entrusted the innovation manager to use her knowledge of the funder to inform the decisions. For instance, the innovation manager recounted her experiences with similar grants and explained what "*usually appeals to this funder, and what they are instead unlikely to fund*". The innovation manager never ventured into choosing her favourite options (this "*would be a step too far*"), but provided frameworks of reference for clinicians to evaluate their proposals. The clinical team, for instance, decided to prioritize integration with the pain service (instead of alternative choices) as this met the funders' criteria more quickly and precisely.

> What you're telling us changes our scenarios. We can show proofs that our new service doesn't overlap with the pain clinic, by getting referrals from them, and accumulating numbers in that space. This is a more sensible start [than addressing neurology first] if we need to establish the novelty of our service more vigorously. (Psychotherapist)

An Action Plan to Support Integrated Care

Overall, integrated care was a favourable arena for the staff managers across the four cases. Far from antagonizing the staff managers, the staff managers actively advocated their involvement inside their jurisdictions. Staff managers' engagement was not temporary nor was the staff managers kept at arm's length. Rather, they were incorporated in the teams as regular members, and they were invited to join the conversations in an expert role.

Staff managers did not respond randomly or casually to the opportunities provided by the clinical groups, though. Rather, they followed a precise "*action plan*" where scut work was followed by expert work, which was in turn followed by diplomatic work. As Green's Quality Manager #1 pointed out: "*we cannot react to the opportunities they provide us, otherwise let's call it a night! Rather, fortune favours the bold…*".

The staff managers always started from scut work, even though such activities were below their rank. Still, scut and technical work allowed a deep engagement with the project, in ways that more strategic responsibilities would not allow. Writing documentations on clinicians' behalf, for instance, granted access to information that professionals might otherwise hide or make 'opaque'; likewise, taking meeting notes allowed access to every meeting and thus a vantage point to see how "*they really talk to each other after they untie their belt a little bit*" (Quality Manager #2, Cicero).

The staff managers engaged in a straightforward social exchange with professionals, i.e. release them from some burden in exchange for access. Getting closer to clinicians, staff managers also increase their own visibility and normalized their presence in the new jurisdiction of integrated care. This was an important condition for the second stage of involvement. The staff managers used their technical work to establish the quality and the diversity of their organizational expertise. After a while, staff managers were not 'just' providing technical work subordinated to clinicians' expert work, but also expert work on their own.

Clinicians became receptive to staff managers as organizational experts who could be relied on in their domain (quality, operations and innovation) and who could provide new insights into their services. To keep such hold, the staff managers were careful to maintain their low profile. They never intruded into any clinical jurisdiction, waited for clinicians to involve them and tactically framed themselves as "supporting cast", "clerical workers", "technical support" or "helping hand" to communicate how much they recognized the primacy of clinicians inside the jurisdiction of integrated care. While sometimes staff managers' organizational expert work sits alongside clinicians' professional expert work, staff managers' status was always subordinated to clinicians. This tactical subordination was the condition for the third stage, i.e. the clinicians now trusted managers' competence and motivations and allowed them to engage with professional disputes. At this stage, the managers enacted a more diplomatic role, using their organizational knowledge diplomatically to 'translate' professional concerns into a more neutral within organizational frameworks.

A Matter of Diversity: The Tactical Use of Disparity, Variety and Separation

While several studies report professionals' reluctance, if not resistance, against managerial involvement (Freidson, 1988; Llewellyn, 2001; McNulty & Ferlie, 2004; Muzio et al., 2013), why were 'our' professionals so well disposed towards the staff managers?

Part of the explanation depends on staff managers' ability to establish their presence through small wins rather than attempting any grand gesture or smash wins (Kellogg, 2018; Reay et al., 2006). Staff managers built momentum by starting with 'easy' wins and establishing their presence and gradually accumulated slightly more complex wins in order to establish their credibility within the jurisdiction of integrated care.

Staff managers' success can be interpreted also through Harrison and Klein's (2007) theoretical lenses, i.e. staff managers used their diversity as a resource within integrated teams to establish their presence and influence. The way they did it, however, is partly counterintuitive.

Theory argues that diversity is a multidimensional construct, made of three dimensions: *variety* of knowledge, skills and abilities, *separation* of interests and goals and *disparity* of status and influence. Increased variety is usually positive because it brings more non-redundant knowledge and social ties to collaborations. This likely increases the quality of decisions and engenders creativity. However, the separation of interests and goals might bring opposing opinions and attitudes, which in turn could compromise cohesion and interpersonal trust.

Disparity of status, instead, might bring unfair treatment towards, and hidden profiles among, the subordinate actors. Overall, this theory indicates that diversity is positive for integrated work when the benefits of variety outweigh the costs of separation and disparity. Managers' diversity is usually regarded as negative to integrated work, however (Finn et al., 2010; Jolanki et al., 2017; Liberati et al., 2016) since: (i) the increase in variety might not be very high, especially when clinical professionals are already expert (or even more expert) in managers' domain (e.g. clinicians knowing their operations better than operations managers); (ii) managers might bring a strident separation of goals and interests, e.g. endorsing an executive mandate to efficiency and control against professionals' focus on patients and (iii) managers might fight against their subordination, e.g. trying to undermine professionals in their jurisdictions.

Status disparity is especially contentious between managers and professionals. Managers are often shown in the literature trying to overcome their subordination and win a more equal status in clinicians' jurisdictions—only to be rebuffed as intruders or a risk to patient safety (Currie et al., 2012; Ferlie et al., 2005; Radaelli et al., 2017).

The staff managers in our analysis subverted each of these three expectations. Firstly (both in terms of time and importance), the staff managers tactically used their disparity to gain support and trust from the clinical groups. Staff managers reinforced and exploited their subordinate status to prevent clinicians' concern that integrated care would become an excuse to erode clinicians' core jurisdictions. Staff managers, in particular, tactically remarked their subordination, e.g. calling themselves "supporting cast", "clerical workers", "technical support" or "helping hand"; and appropriating scut work that professionals regarded as demeaning. This proved to be a savvy tactical manoeuvre to gain acceptance from clinicians, remain committed to teamwork and increase their voice even within professional disputes. As a result, across the four cases, the clinic groups rarely 'looked up' to their executive management to solve their tensions, as this could demonstrate their weaknesses and unleash mechanisms of control from above. Rather, they 'looked down' to their staff managers as trustworthy and impartial partners—but also organizational actors that could be easily contained and restricted when necessary.

After that, staff managers dispelled any concern they would pursue separate interests and goals. As Cicero's Quality Manager #2 noted: "*we speak a different language, but we understand each other pretty well – after all, we're all rowing in the same direction*" (Quality Manager #2, Cicero). Staff managers were not an expression of the executive board (e.g. their 'ambassadors' of efficiency and control), but sometimes defied them to show more proximity to core principles of professional work.

Staff managers thus approached the clinical groups by communicating their intention to maintain high disparity of status (i.e. managers being subordinated to clinicians) and low separation of interests and goals (i.e. managers subordinating their own interests to clinicians'). This was the condition for staff managers to manifest and promote the variety of knowledge, skills and abilities, i.e. how much their diverse knowledge complemented rather than antagonized the knowledge, skills and abilities provided by the clinicians.

Under those conditions, staff managers' knowledge was appreciated by clinicians as value-adding—"*a different pair of glasses*" (Medical Consultant #1, Cicero). Clinicians were self-conscious about their knowledge in the domains of quality, operations and innovation, noting they often made decisions using their medical know-how or replicating what they had observed from their predecessors. Staff managers' knowledge was non-redundant, since they had developed in other contexts (sometimes other organizations, other times in different industries altogether); furthermore, it had theoretical vigour as it provided an alternative or deeper explanation to what clinicians were doing. So, clinicians saw the opportunity to overcome their own managerial inertia by learning new concepts and theories from the staff managers. It was then advantageous for technical managers *not* to be hybrid professionals and instead be fully immersed in their organizational profession. That optimized the amount of non-redundant knowledge and experiences they could bring to the table.

Implications for Practice

Our examination of four cases of integrated care highlighted the active role of staff managers within integrated care projects requiring a complex revision of professional jurisdictions. The staff managers used their diversity skilfully to carve a niche for themselves. Staff managers exploited their disparity (i.e. their subordinate status) as a key tactical resource to gain access inside the contested professional jurisdiction, display their expertise, gain trust, and even be invited to mediate professional conflicts. Staff managers' disparity was a key condition for their non-redundant knowledge (i.e. their variety) to be used and appreciated by the clinical groups. So, in essence, the combination of high variety, low separation and high disparity proved irresistible to clinicians.

While these opportunities arguably extend to any professional change, integrated care might provide a peculiar opportunity for staff managers to demonstrate their usefulness in the organization. Integrated care indeed requires clinical groups to look beyond the boundaries of their own compartmentalized practice and reach out to new jurisdictions (as well as have others reach into their own jurisdictions). The challenges of integrated care, as manifest in the four cases, stimulate clinicians' perception that their disciplinary knowledge might not be enough and exposes them to political dynamics as they negotiate new practice with other professional groups. This is a scenario where clinicians look forward to new knowledge and are re-assessing their influence and autonomy on practice—hence, actors like staff managers who increase knowledge without compromising clinical autonomy are ideal partners.

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CHAPTER 9

Leadership for Innovation in the English NHS: Insights from Policy, Academia and Practice

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INTRODUCTION

Following the global financial crash in 2008, austerity policies since 2010 have demanded public services such as healthcare deliver more with less (Diamond & Vangen, 2017). When combined with increasing service demand and rapid advances in the wider life-sciences and health

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economy, the necessity of innovation for the future sustainability of the English National Health Service (NHS) is acute. Yet, while innovation conjures images of individual entrepreneurship, the NHS represents a diverse system of many actors and organizations, far greater than the sum of its parts. The challenge of innovation for ensuring the sustained delivery of high quality, affordable and equitable healthcare is thus everyone's responsibility—from front-line practitioners and managers to political decision-makers, industry and public service scholars alike. Similarly, it would seem for effective innovation leadership; there is a need for leadership to be distributed among stakeholders in all parts of the system.

There has been much interest in studying the fundamental role that leadership has for innovation (Battilana et al., 2010; FitzGerald et al., 2013). Although "great hero" models still circulate in which individual leaders are the central actors, there has been growing understanding that innovation encompasses complexity, related to professionalized relations and practices of interdependent actors, organizational constraints and hierarchical structures (Currie et al., 2008; Rosing et al., 2011). Professionalized settings, such as healthcare, are characterized by diffused power and plural organizational objectives (Martin & Learmonth, 2012), shaped by expert knowledge and managerial authority (Currie & Suhomlinova, 2006; Fitzgerald et al, 2002). As such, for innovation to take place in such settings, professionals and their managers have to work in a concertive and conjoint way (Gronn, 2002), with leadership emphasized as one of the most important influences on innovation (Jung et al., 2003). Yet, we lack insight about what types of leadership and leadership tactics are appropriate for innovation (Mumford & Licuanan, 2004).

Translating both political will and scholarship for innovation leadership to front-line action, represents an ongoing challenge for the NHS. Despite attempts to promote innovation through stakeholder engagement by adopting private sector models of open innovation (Chesbrough, 2003) or collaborative innovation (Sørenson & Torfing, 2011), there can often be a lack of organized implementation strategy and leadership for innovation in professionalized settings. Innovative ideas may not diffuse beyond local adoption and innovation champions, usually front-line clinicians, who may become disillusioned along the way. This raises questions of not only how leadership for innovation can contribute to sustainable healthcare, but the sustainability of innovation as an approach to transforming the NHS.

Giving insight into the focus and direction of political thinking about innovation and leadership, our multi-level analysis first explores how innovation and leadership in the NHS have been addressed at a national level over the past decade. Second, we consider academic literature to outline what we know about innovation leadership and where more understanding may be needed. The third part of this chapter reflects upon a practice-based example of an innovation within an NHS hospital setting, that when taken together, highlights where implementation gaps may lie. In conclusion, we suggest several future directions for innovation policy and practice.

Policy Directions for Innovation and Leadership in the NHS

While innovation for many years has generally been viewed as the preserve of private industry as a means to create competitive advantage, increasingly governments worldwide recognize that innovation carries social value for tackling some of the most pressing environmental, societal and healthcare challenges of the day (Harris & Albury, 2009). The concept of innovation gained significant momentum within the UK Government in the early years of the twenty-first Century as a normative good for all public services including healthcare, despite limited understanding of how it should be achieved (Osborne & Brown, 2011).

In 2010, The NHS Institute for Innovation and Improvement published a practical guide for leaders to help create a widespread culture of support for innovation across all types of NHS organizations (Maher et al., 2010). Following a survey by the Institute during the previous year, it had been found two thirds of NHS staff did not feel supported to undertake innovation (ibid., p. 3). Moreover, the incumbent Chief Executive of the NHS had stated in the *NHS Annual Report* (2009 as cited in Maher et al., 2010, p. 1), that strategies and processes were “not sufficient to drive the degree of change we are seeking… the NHS should focus on tackling the behaviours and cultures in the system that stand in the way”. In effect, the culture of the NHS was perceived as the primary barrier to transformation and innovation.

The following year, the Department of Health (DoH), together with NHS improvement agencies, published a vision and set of measures to accelerate the speed of change and innovation. In the document entitled *Innovation Health and Wealth* (IHW, DoH, 2011), it was recognized that while the NHS is a hotbed of ideas; the fundamental challenge was to foster greater collaboration with industry and academia, to pursue innovations that added value but not cost. Moreover, that such innovations needed to scale-up and manifest as system-wide change. The paper outlined six factors which acted as barriers to diffusion of innovation, of which leadership was one. Addressing this, was a recognition that innovation leadership needs to be strengthened through improved local accountability and clearer innovation priorities while culturally, that innovation needed to be "hard-wired" into training and education for managers and clinicians to bring about the requisite cultural shift.

To achieving greater speed for innovation adoption and diffusion, the report offered several strategy points including: (1) establishing Academic Health Science Networks (AHSNs) to bridge the gap between small to medium enterprises (SMEs), their innovations and NHS organizations; (2) creating an NHS innovation fellowship scheme; (3) embedding innovation into all NHS training and competency frameworks and (4) strengthening leadership and accountability at board level. Although aiming to address culture and distribute leadership at the front-line, these large structural reforms were very top-down and lacked clarity about how such change would impact on innovation, culture and the distribution of leadership in practice at more local levels. Reviewed one-year on, IHW had made considerable progress on meeting its action targets, but the impact of these on innovation, cultural change and distributed leadership were not established (DoH, 2012).

Following the achievements under the IHW strategy, in 2014 the NHS *Five-Year Forward View* promised further structural support for innovation (NHS England, 2014). Key initiatives were a commitment to developing Testbed centres to allow innovation to be piloted to evaluate feasibility for scale up of promising innovations at the system level. Underlying testbeds was a recognition that innovations need to generate more robust and reliable data about their success. Commitments also extended to developing a closer relationship with National Institute of Health Research (NIHR); ensuring the reach of NICE was expanded to include assessment of new devices and promote those that offered exceptional value, and to work more closely with innovation partners such as MedTech. Little attention was given to the cultural and leadership issues cited by previous strategy documents. Similarly, embedding innovation into NHS training and competency frameworks was not evident in the new *Healthcare Leadership Model* published by NHS Leadership Academy in 2013 (NHS LA, 2013). Innovation was referred to, albeit cursorily, in only two of the nine leadership dimensions proposed.

In parallel, the Kings Fund, an independent healthcare think tank, had begun to champion a move away from individualistic, heroic styles of leadership towards a more collective approach following their commission into leadership and management in the NHS (Kings Fund, 2011). It was critical of structural initiatives such as the creation of Foundation Trusts which have not unleashed promised innovation (p. 26). The findings of the commission recommended movement towards shared leadership within single organizations and between different organizations by distributing leadership practices horizontally across the organization. The ideal of collective leadership was articulated further in a second publication: *Developing Collective Leadership for Healthcare* (West et al., 2014). Shared leadership was linked to innovation by virtue of its capacity to generate a climate in which innovation and good care could flourish. For example, shared leadership was claimed to support development of trusting relationships, create a positive, nurturing and learning organizational climate and increase staff engagement and effective team working—all of which promote innovation, improvement and quality care.

Moving forward, a further briefing paper by West et al. (2017) made connections between leadership and innovation more explicit—*Caring to Change: How Compassionate Leadership Can Stimulate Innovation in Healthcare*. The paper presented an argument for cultural change to support innovation that required compassionate leadership, which by its nature is collective and shared (p. 9). This was linked to the new *National Improvement and Leadership Framework—Developing people, Improving Care* (2016), which had compassionate leadership at its core. Compassion was positioned as a superordinate value, functioning as central point from which shared leadership could emerge.

The National Improvement and Leadership Framework is no longer publicly available and appears to have been replaced in 2017 by the *Well Led Framework* (WLF) linked to the Care Quality Commission. WLF encourages NHS organizations to undertake an assessment and developmental review of their leadership and governance structures through a number of key lines of enquiry. One enquiry point asks: "Are there robust systems for learning, continuous improvement and innovation"? Following which, a number of suggestions are given such as setting realistic stretch objectives, proactive leadership to promote and generate the cultural conditions and activities for innovation. These include staff training, celebrating successes and creating collective accountability through staff appraisals focused on innovation. Further advice on collective leadership for innovation was sparse with the focus of WLF on organizational and leadership assessment. The impact of the framework was evaluated (Chamber et al., 2020) and WLF was found to lack the: 'capacity to support providers to improve their leadership'. On this basis, the evaluation recommended clearer advice and examples to support cultural change and collective leadership for innovation.

Two more evaluations have also been undertaken on both the innovation fellowship scheme (NHS Innovation Accelerator—Cox et al., 2018) and the AHSN network (Collins, 2018) first proposed in IHW strategy paper (DoH, 2011). The former did not identify collective leadership an important factor for innovation scale-up and diffusion. Rather, the readiness of the innovation for market, innovators' networks and social capital and their understanding of commissioning structures were among the highlighted ingredients for success. Meanwhile, evaluation of eight innovations that had spread under the AHSN network revealed the existence of widespread variation in levels of senior leader support for innovation, silo effects, discordance between local and national priorities and whole system adoption (overseas) comparative to individual organizational adoption (in the English NHS). It was concluded that despite some spread; innovation in the NHS remains challenging.

Seeking to overcome the difficulties of accelerating innovation, the DoH and NHS published their *Long Term Plan* (NHS England, 2019). Building incrementally on previously established strategy, the plan proposed a model of performance related funding for AHSNs to incentivize spreading innovation, expanding the Testbed programme and continuing with the NHS Innovation Accelerator fellowship scheme. For culture and leadership, a renewed commitment was expressed to develop and embed a culture for innovation through expanding leadership development for all and developing knowledge of improvement skills. Meanwhile, greater levels of collective leadership were expected to emerge from movement towards integrated care systems, which bring together local organizations to redesign services and improve population health.

Over the past decade, successive policy and decision-makers have regarded innovation as critical to ensuring the sustainability and future direction of the NHS. However, the strategic roadmap for realizing this ambition has been somewhat less clear. Throughout, there have been two central themes of structural support and cultural transformation for innovation to flourish. Steps have been taken to build a national-level supportive infrastructure for innovation, ranging from the establishment of the AHSN network to an extensive Testbed programme. In parallel, attempts have been made to transform the culture of NHS organizations with a focus on collective leadership for service delivery and innovation. The ambition being to displace individualistic modes of leadership resulting in a more collectively oriented constellation of distributed leadership behaviours and an inclusive, safe, learning environment that rewards, encourages and facilitates innovation across the NHS as whole.

Independent research evaluating experiences of innovation situated in practice (Collins, 2018) suggest translation of this vision into practice remains some way off. At a structural level, the research found commissioning structures were too remote creating a bottle neck for innovation decision-making, adoption and spread. Conversely, AHSNs supported NHS organizations to make links with innovators and solutions to address their local needs. In relation to culture, notions of compassion and/or collective leadership were not evident and findings were mixed. Formal leaders were highly supportive encouraging networking and facilitating access to resources for some innovators. Others found their organizational leaders actively discouraged innovation by directing focus on maintaining service delivery. As highlighted earlier, the efficacy of cultural transformation to support innovation across the whole system requires wholesale buy-in across the entire NHS workforce or risks the kind of variability surfaced in the report that hampers efforts to encourage adoption and spread.

Finally, policy discourse positions the innovation problem as one to be solved by addressing dual concerns of structure and culture and in doing so have overlooked integrating notions of agency as a third, yet vital ingredient. In the literature, agency has been defined as the capability of individuals ‘empowered to lead change through their localised knowledge, their skills, and their decisions’ (Martin & Learmonth, 2012, p. 285), in policy terms—leadership. National strategy for innovation conceptualizes innovation leadership as a driver and catalyst for cultural change that in turn will deliver innovation, rather than a central component propelling and accelerating innovations through their journey. Thus, leadership has become decoupled from innovation processes, limiting the agency of individual innovators as reliant upon those attributed with more formal agency and power such as senior organizational leaders and commissioning groups. While ‘entrepreneurism is alive and well in the NHS’ (Collins, 2018 p. 5), hierarchical and bureaucratic institutionalization of leadership also remains firmly entrenched. A claim supported by the evaluation of the Innovation Accelerator Fellowship (Cox et al., 2018, p.23), which highlighted innovators valued support to make introductions and ‘identify people with power to influence innovation adoption’ and grant access to a wide network of senior healthcare staff.

The strategic vision for leadership in the NHS to become less hierarchical and more distributed in support of innovation has yet to materialize despite efforts to codify it into policy discourses and improve access to widespread leadership development opportunities (NHS England, 2019). We argue this is because collective leadership and its relationship to innovation is not yet well understood. In its place has been a focus on compassionate leadership, which although related to collective leadership, has nevertheless been consistent with the problematization of innovation as a cultural issue. Restoring focus back upon collective leadership (i.e. distributed leadership) and its utility for innovation is of critical importance if innovation strategy is to avoid reinforcing institutional hierarchy, but capitalize on the opportunities afforded by recent policy moves towards integrated care systems. To help build our understanding of distributed leadership and its relationship to innovation, we next explore the academic literature surrounding distributed leadership and innovation in the context of healthcare.

Collective Leadership for Innovation

Various commentators have examined leadership as a means to stimulate and ensure the success of innovation. The extant literature attends primarily to individualized transformational or charismatic leadership (Howell & Avolio, 1993; Jung et al., 2003; Paulsen et al., 2009; Sarros et al., 2008). Individual charismatic leaders promote innovation by transforming the needs and aspirations of followers, enhance their involvement and commitment to the goals of the organization and motivate them to perform above and beyond their own expectations (Paulsen et al., 2009). Charisma, creativeness and intellectual stimulation are considered key ingredients leaders should possess to motivate followers, engage their personal value systems (Bass, 1985; Gardner & Avolio, 1998) and encourage followers to think creatively (Sosik et al., 1997). In this respect, the leader is acting as a facilitator or champion, trusting, supporting and stimulating people's appetite to become creative and pay attention to new ideas (Howell & Boies, 2004; Howell & Higgins, 1990; Taylor et al., 2011). Following which, studies identify certain traits transformational leaders should possess for successful innovation (García-Morales et al., 2008; Rosing et al., 2011; Yukl, 2008; Zhou & George, 2003).

Associated with this, current literature sheds most light primarily upon the initiation of innovation, largely using cross-sectional research designs and focusing particularly on how to engender creativity and harness new ideas (Rosing et al., 2011). Focusing upon how to organize team creativity and harvest new and promising ideas does not account, on its own, for how innovation is implemented and then scales up for wider effect. Consequently, other studies have criticized the relevance and usefulness of the individualistic view of leadership in the innovation process (Bolden, 2011; Carson et al., 2007; Currie & Lockett, 2011; Denis et al., 2012; Gronn, 2002, 2015; Spillane et al., 2001). They argue post-heroic leadership alternatives that go beyond a single, 'heroic' individual may be needed to manage the highly political and uncertain innovation process (Van de Ven, 1986). Such a non-heroic approach to leadership is conceptualized as shared, relational and distributed (Denis et al., 2012; Uhl-Bien, 2006), encompassing both formally appointed leaders but also leaders that emerge more informally as a means of supporting and promoting innovation (Carson et al., 2007; White et al., 2014).

Recent academic commentary suggests rather than focusing on how leaders engender creativity alone, there may be significant value examining leadership for innovation as a shared and distributed phenomenon (White et al., 2014). However, with some notable exceptions (cf. FitzGerald et al., 2013), such distribution of leadership for innovation has rarely been studied in depth (Currie & Spyridonidis, 2019). Consequently, we still lack in-depth understanding of the spread of leadership influence (White et al., 2016) during innovation.

Notwithstanding the weaknesses of research about leadership for innovation, literature reveals different tactics that commonly a singular leader engages in to initiate innovation. For example, building partnerships, appealing to higher authority, bestowing rational arguments, being approachable and applying sanctions are just some of the key tactics detailed in the leadership for innovation literature (Denis et al., 1996; Kipnis & Schmidt, 1983; Kipnis et al., 1980). In complex professionalized organizations, different tactics might be enacted by a more distributed group of actors, particularly when we move beyond the initiation phase of innovation. However, insight is relatively absent about such tactics within professionalized contexts. We detail and critique current insight in the following section.

We know relatively little about types and tactics of leadership in professionalized settings, such as healthcare, law and accounting. Professionalized organizations present a new way of thinking about leadership (Empson & Langley, 2015). In such settings, leadership influence may be derived from different and perhaps conflicting resources, for example, professional status and managerial accountability. As such, leadership almost inevitably becomes politicized (Denis et al., 2012).

To examine leadership configurations during the innovation journey in a professionalized setting, with a focus upon interdependent actors, the concepts of concertive action and conjoint agency are particularly relevant (Gronn, 2002). Concertive action describes situations where leadership actors with diverse skills, expertise and different organizational affiliations pool expertise in an emergent manner and within a framework of mutual understanding to work collectively on a task. Conjoint agency refers to the 'direction of leadership influence' and involves two patterns. The first relates to interpersonal synergy and the second, to reciprocal influence. A formal leader may take a more strategic view during the innovation journey by driving the initiation phase of the innovation with a focus upon financial planning, resource allocation and setting expectations of followers. At the same time, another of the leadership team (e.g. a middle manager) may act as a linking pin between the strategic apex of the organization and professionals at the operational-level (Currie & Procter, 2001; Burgess & Currie, 2013; Spyridonidis & Currie, 2016), adopting a leading role in ensuring that professionals buy into formal leaders' vision and strategic objectives. Finally, other members of the leadership team, with stronger affiliation to professionals on the ground, facilitate the implementation process by acting as champions of change (Dopson et al., 2002). Such reciprocal relationships between interdependent leadership actors involve influencing each other. This transpires in a 'zig-zagging spiral' fashion, with each leadership actor 'bearing the accumulated effects of successive phases of influence, as they begin to influence one another again' (Currie & Lockett, 2011, p. 289). In doing so, leadership practice emerges as a result of different (individualistic and distributed) leadership tactics that must be performed in a particular sequence or in parallel (Spillane, 2005).

Empirical examples of such a distributed leadership effect are relatively absent, rendering it difficult to connect-up policy initiatives with what we know about leadership for innovation and its distribution, to make impact upon front-line services. In the following section, we present an empirical example of innovation enacted within an acute secondary healthcare setting, to understand how policy and academic scholarship are manifested (or not) in real-world innovation practice.

Innovation and Leadership in Situated Practice

Innovation within healthcare is key for driving continuous improvement, operational efficiencies and better clinical outcomes (Bessant & Davis, 1999; Waldman & Bass, 1991), and therefore, it is imperative that clinical leaders and managers are equipped with leadership capabilities to enable innovation. The complex interrelationships between front line operational clinical leaders and organizational management may determine the success or failure of innovation. An external facing organizational culture that empowers employees to innovate autonomously and without fear of failure are much more successful in innovating than internal facing and hierarchical organizations (Rostain, 2021) such as the NHS. The establishment of Integrated Care Systems in April 2021 is challenging the financial and political status of NHS organizations, with an investment on innovation sustainability including digital innovation, so that NHS systems can better align with the developed, often private and voluntary, healthcare systems. The creation of organizational partnerships and strategic collaborations between public, private, voluntary and academic institutions could further promote inter-organizational learning and innovation (Burgess et al., 2019).

A good example of innovation involving a strategic collaborative is a remote monitoring technology in Oncology with AI capabilities, for which the ultimate goal was to manage treatment of cancer patients in the community to prevent emergency admissions to A&E departments should treatment crises occur. The innovation was pioneered by a frontline Oncology clinician at a large teaching hospital in the English NHS, whose idea was selected through an "ideas den"—a top-down organizational initiative to enable frontline innovators to share their ideas and compete for the chance to receive executive-level support and resources to develop and implement their innovation. The remote monitoring solution was shortlisted by the executive and non-executive director teams who made up the ideas den panel and subsequently, the clinical lead, in collaboration with the innovation and transformation teams (collectively known as the Innovation Hub), coordinated a national grant application to pilot the innovation for 18 months.

To develop the grant application, the clinical innovator convened a multi-stakeholder team comprising both internal and external actors, which is known in academic, public service innovation literature as collaborative innovation (Sørenson & Torfing, 2011). External collaborators were two SME technology enterprises and an academic from a nearby university medical school. Of internal NHS staff, there was a radiologist and a number of non-clinical staff from ICT, R&D and MedTech, with overall facilitation co-ordinated by the hospital Trust's innovation hub. The hub's executive director worked to help accelerate parts of the application through internal governance and scrutiny panels and particularly with the finance department. Meanwhile, the external academic played a key leadership role by first introducing the SMEs who could help build the technological infrastructure around the AI component of the innovation. Second, they took responsibility for the evaluation component of the grant application and were perceived by the internal hospital actors as invaluable to the innovation process. One NHS interviewee from the case study claimed:

> What impressed me a lot was the university who said great, let's play this game, let's get involved and they had all these contacts that have made all these things happen. (Clinical/Support Hybrid, 10)

Overall, the collaborative team enacted a form of collective leadership, with tasks shared between them based on areas of expertise or field of influence and power. For example, the external university academic had very little power to influence within the hospital systems:

> I wasn't enmeshed in the management system at the Trust and so I wasn't constantly worrying about how we'd get this done…I don't get involved. The bits we had to do, I just got on with that. (Academic)

Meanwhile, internal staff, such as the innovation hub director, were able to facilitate and remove barriers from within the organization. The distribution of such responsibilities among the team was emergent and spontaneous rather than delegated as may be the case in team leadership (Currie & Lockett, 2011), suggesting that some form of distributed leadership had been enacted by the multi-stakeholder team. Yet notably, absent from the development process were a number of key stakeholders. Members of the ideas den panel were not present in the development process and neither the group manager. Also notable by their absence at team meetings were patient representatives, commissioners, nursing staff and representatives from the regional AHSN.

Following submission of the funding application, the innovation was shortlisted to receive an award to enable the innovation to be piloted. The application of the business modelling approach to innovation (van Limburg et al., 2011), through the development of a clear strategy for the evaluation of innovation benefits, was positively perceived by the national innovation funding panel. This approach ensured a broad local stakeholder involvement in the innovation process, co-creation of solutions with key stakeholders and earlier problem-solving (van Gemert-Pijnen et al., 2011; van Limburg et al., 2011). However, the project plan was not supplemented with a comprehensive stakeholder engagement strategy and lacked a plan for early engagement of local clinical commissioning groups whose support was essential for the innovation to be sustained beyond the pilot phase. The identification and engagement of early adopters is key, including clinicians and patients, who were the end users of the innovation. Although patient and public engagement was robust and began early in the innovation process through a consultation and research phase, there was late involvement of clinicians on the front-line who resisted the innovation.

Despite being shortlisted, the national funding panel did not award the required funds and the innovation stalled before being adopted. The hospital lacked sufficient resource capability to independently invest in the digital innovation despite the presentation of a compelling business case by the innovation team to the hospital's executives. More importantly, there was a lack of adequate internal IT resource and technical expertise to deliver the digital integration with the existing electronic health record. The implementation and diffusion of innovations can be financially complex, due to inter-organizational partnerships. In this case, a collaborative between the leading NHS organization, business partners and academic institutions, requiring good commercial capabilities from the part of the leading organization (Williams et al., 2008). The innovation collaborative between the NHS, industry and academia, needed clearer clarification and agreement of shared risks and rewards. In this digital innovation case, there was no robust agreement of what the partnership could look like long-term and how risks and benefits would be shared. Even if the innovation fund had been awarded, the management and distribution of funds across the lifetime of the project was a risk also expressed by the national innovation funding panel.

That the hospital was dependent on external funding to support implementation of many innovations demonstrated an absence of organizational resilience when it comes to innovation, as described by Fukofuka (2015). Moreover, a limited level of investment for innovation by the hospital posed an organizational threat, in that clinician innovators could stop coming forward with ideas or find other means to develop their innovations outside the organization leading to a potential loss of intellectual capital. In addition, misalignment between the hospital's vision to promote innovation and the resources available to innovators for implementation was evident. Although having an innovation hub to accelerate innovation, the hospital continued to shy away from a culture of experimentation and risk-taking behaviour which was perceived as a lack of organizational support among clinicians. Finally, there was no structured engagement strategy between local commissioning groups and the hospital for the purpose of promoting and sustaining innovation.

Despite a number of contributing factors to the failure of this specific innovation, the hospital demonstrated presence of a learning culture by reflecting on the barriers and implementing organizational change in its wake. The constructive feedback offered by staff involved in the innovation alongside feedback from the national innovation funding committee has helped the hospital to make changes and raise its innovation profile within the integrated care system. An innovation and research strategy was written and supported by newly appointed Innovation and Research and Development clinical leads. These clinicians hold strong partnerships with local academic institutions; the regional AHSN as well as with industry that has continued to attract new innovators and potential investors. The innovation hub has begun to increasingly collaborate with the R&D department, and a business partner was appointed on a permanent basis to offer advice on intellectual property matters. These organizational changes give a positive signal to clinicians and potential innovators, who continue to come forward with their ideas.

IMPLICATIONS FOR PRACTICE

In the final section of this chapter, we integrate insights gained from the policy and academic literature and our example of innovation in practice to first identify what may be an implementation gap. Second, we suggest a number of ways in which the three levels of policy, scholarship and practice may be aligned more closely towards a more integrated and collective leadership strategy for developing innovation as a sustainable practice.

Collective Leadership for Innovation

Reviewing policy-related literature highlights the challenge of innovation in the NHS has consistently been regarded as a cultural phenomenon with calls for collective leadership to address this. Yet, while there is a broad rationale that collective leadership could be a panacea that accelerates innovation, there remains a dearth in guidance on how collective leadership could be achieved in practice by local-level individual NHS hospital Trusts. Current leadership models for the NHS focus on leadership as a catalyst for cultural change, with a broad array of individual leaders charged with steering followers towards a transformative cultural turn invoking distributed leadership and innovative activity. Meanwhile, innovation is only weakly embedded in such leadership development frameworks, which remain stubbornly focused on the competencies of individual leaders rather than how to create, build and sustain capacity and capability for leadership, innovation and cultural change management across individual organizations and wider healthcare systems.

Addressing the infrastructure for innovation has been somewhat more successful with two key initiatives of importance. The first of these is the innovation accelerator fellowship programme, which awards individual innovators with access to support and resources for translation of their innovation into widespread adoption. This is achieved through executive coaching, improved understanding of the commissioning landscape and access to senior health figures and change leaders whose buy-in increases the likelihood of adoption and diffusion across the wider NHS. Contra to distributing leadership, such initiatives reify leadership along established hierarchies of powerful others that facilitate and accelerate only a handful of competitively screened innovations that have a high probability of success given their stage of market readiness.

Greater movement to distribution of leadership is more evident in the governments initiation of a regional AHSN infrastructure across England, yet despite attempts to accelerate innovations, evidence has shown at local-levels of individual NHS organizations that work with AHSNs; there has been variability in managerial support for innovation, silo effects and a persistent struggle to influence wider adoption of innovation in a healthcare landscape characterized by individual, and often competitive, NHS Trusts (Collins, 2018). The most recent Long Term Plan for the NHS does little to address these issues offering simply to expand more of the same, and although it is hoped integrated care models will enable greater distribution of leadership and innovation, how this might happen remains up to individual NHS organizations.

Across the policy-related literature a recurring theme is that the NHS is no clearer on how innovation should be achieved than when reviewed over a decade ago by Osborne and Brown (2011). Although change is called for, responsibility remains firmly with individual NHS organizations and AHSNs to "figure out" through trial-and-error how best collective leadership could be configured to support innovation and cultural transformation from the bottom-up. Top-down initiatives do play a function by incentivizing and supporting innovation through Testbeds and innovation fellowships, but these offer a platinum vehicle for a fortunate few, while the broader issue of distributed leadership for innovation remains.

Scholarly perspectives on collective leadership for innovation are somewhat reflective of and intersect with political thinking. Transformational and charismatic models of leadership still dominate in the innovation leadership literature. For example, notions of collaborative innovation highlight three behaviours or roles an innovation leader must enact, namely: convening, mediating and catalysing (Hartley et al., 2013). These same accounts are parallel with leadership development frameworks in the NHS that focus primarily on developing behaviours of successful change leaders who can motivate, inspire and enable followers to also be innovators and agents of cultural change. The academic turn from this approach to pluralistic and collective leadership and more recently to systems level leadership (Ospina et al., 2020) has also not gone unnoticed in the policy space with political discourse leaning towards more equitable distribution of leadership and local responsibility (Martin & Learmonth, 2012). Similarly, the influential Kings Fund has increasingly promoted collective leadership. However, in the vacuum left by political uncertainty surrounding how to realize and enact distributed leadership for innovation, the academic community have sought to articulate further.

Much of the focus of scholarly literature on distributed leadership for innovation has been centred on process and practices of key actors as leadership is distributed across a group or network of actors. For example, a comparative study of a cancer genetics pilot in the NHS found that distributed and dispersed leadership contributed to the success of one pilot facilitated by good pre-existing relations and managerial alignment between the pilot and the priorities of organizational leaders (Martin et al., 2009). Another study of innovation diffusion highlighted that different professional groups such as doctors, nurses and managers influence the innovation journey in different ways and at different times, with managers acting as facilitators exhibiting ambidextrousness (Rosing et al., 2011)—recognizing who ought to act and when (Currie & Spyridonidis, 2019). Such studies are of crucial importance shedding light on some of the processes and practices of enacting distributed leadership, but don't necessarily illuminate how distributed leadership can be initiated. Moreover, examples are often contained within the contextual boundary of a single organization and focus on internal professionalized actors such as doctors and nurses. Rarely does our understanding of distributed leadership for innovation consider distribution across wider systems (Ospina et al., 2020), indicated as critical for innovation in our empirical example.

Further, highlighted by our example was that leadership can be distributed among a diverse group of NHS professionals and external actors when they collaborate for innovation—each bringing a unique skill set, leadership capabilities and influence to bear upon processes of innovation development. While the distribution of leadership was relatively successful in generating a robust business case and successful proposal bid to a national funding agency, of itself, distributed leadership was not distributed widely enough across the regional system to engage more powerful stakeholders such as clinical commissioning groups and the AHSN.

That this innovation failed to gain the necessary traction with the national funding agency reflected a bottleneck created by the Testbed infrastructure emergent from the policy environment and associated initiatives such as the innovation accelerator fellowship. Both are highly selective processes whereby the trajectory of an innovation becomes concentrated in the hands of relatively few decision-makers who enact a selectivity function to focus on innovations likely to not fail. Yet, it is well-known many innovations will fail (Miller, 2016) meaning the burden of innovation risk is disproportionately born by individual NHS organizations and clinical innovators, least equipped to finance innovation projects that inherently always carry a degree of uncertainty. Moreover, notions of distributed leadership encounter a similar constriction since selection panels act as gatekeepers to the fluid and dynamic processes of reciprocal influence characteristic of concertive action and conjoint agency.

Within existing systems of innovation, the actors in our example demonstrated a degree of distributed leadership and under a different configuration of leadership distribution may have succeeded to propel the innovation forward. For example, if engagement in the innovation development process had been extended beyond top-down approval for the innovation through the ideas den, greater support would have been available to help with the innovation process, clinician incentivization and wider organizational engagement. A comprehensive stakeholder engagement strategy at an organizational and system-level often needs to complement the entrepreneurial approach of local innovation champions to maximize innovation sustainability (Barker et al., 2016; Hunter et al., 2012; Martin et al., 2012). Second, the team lacked knowledge of commissioning structures, intellectual property, commercial experience and coaching support from senior managers, which would have signalled a need for the clinical innovator to convene a greater team more representative of the wider system that would be critical for the successful integration of the innovation across the oncology care infrastructure. Addressing the latter, national schemes such as the Innovation Accelerator Fellowship appear highly relevant as a resource to meet these needs, yet access is limited by the competitive nature of the fellowship.

To improve the distribution of leadership capacity and capability across the NHS for innovation, a greater requirement for synergy between national policy, scholarship and local practice exists. At the national-level, initiatives have failed to translate into support and distribute leadership for innovation across individual local-level NHS Trusts. We argue this is because leadership is not distributed widely across the entire NHS system. At local-levels, collective leadership for innovation does occur in variable pockets, evidenced in our empirical example and academic studies which have explored practices of leadership distribution and its positive effect in specific organizations in the context of discrete innovation projects. However, as attempts are made to accelerate trajectories of innovation beyond the organizational or local-level, distributed leadership encounters a wider systemic structure of complexity and hierarchical power by decision-making entities, which become arbiters of whether given innovations are scaled up and adopted or not. In sum, leadership for innovation remains concentrated in the wider national system but shows some dispersal at local levels.

Greater efforts to distribute leadership for innovation at local levels by addressing the culture of individual NHS organizations may be one solution, as proposed by think tanks such as the Kings Fund that argue for compassionate collective leadership. However, while such local increases may help reduce the variability encountered by AHSNs when working to support innovation generativity and adoption, such steps would be unlikely to address the relative absence of system-level leadership distribution (Ospina et al., 2020) and bottle necks would remain. Alternatively, greater distribution of leadership away from a narrow, national apex of decision-makers to a more localized approach could be beneficial. To this end, we propose five ways this could be achieved.

1. At the local level of individual NHS Trusts, there needs to be an expansion in and fostering of stakeholder engagement beyond organizational boundaries. Foreshadowed by integrated care systems, individual NHS organizations need to work collectively and develop closer links with AHSNs, local commissioning groups, business leaders and academics. Further, not only engagement but inclusion into organizational innovation processes. Distribution of leadership is often enacted by front-line professionals lower down in organizational hierarchies, but they are limited as to the stakeholders they can draw upon by the extent of their own networks. Executive team networks across the local system should be a resource made available to innovators, facilitated by greater and earlier engagement of senior, strategic leaders and stakeholders within the innovation development process.
2. Regional AHSNs may be an underutilized resource for innovation. In relation to systems, AHSNs appear to occupy a strategic middle ground between national agencies, individual NHS Trusts, SMEs, innovators and academics. Distributing resources and leadership for innovation away from national agencies where competition is fierce and limiting, to AHSNs that operate less competitively and more collaboratively (Fairman, 2013), may facilitate the distribution

of leadership and greater opportunities for innovators to develop their innovations further. The impact of which reduces the win or bust dynamic for innovation experienced by innovating teams when applying to such schemes which can threaten the future motivation of innovators. Moreover, where innovations may not be suitable for national scale and spread, AHSNs may still support innovations to be implemented regionally as solutions to local-level issues.

3. The advantages of the NHS Innovation Accelerator Fellowship were made clear in our discussion but remain limited to relatively few innovators. The benefits of this scheme need to be more widely distributed as access to networks; coaching and commissioning knowledge is underdeveloped among clinical innovators and their teams. Access to these resources could be made available through the AHSN network which could offer more equitable access without the need for selective competitive processes.
4. Academic communities and the knowledge they generate are interdependent with enacted practices and policies, each informing the other. Trends in academic thinking inform political developments and vice-versa. Academic scholarship is well positioned to expand current understandings of collective leadership beyond relatively bounded cases within individual organizations to consider distribution of leadership for innovation across networks and larger systems. Doing so will provide, theoretical justification, empirical evidence and support to policymakers seeking to encourage and facilitate the broader distribution of leadership in the NHS.
5. We found a disjuncture between NHS leadership development frameworks, innovation and notions of distributed leadership; the latter highlighting emergence of different leadership capabilities and styles by different actors at various times and in various ways rather than competencies. We suggest consideration be given to how distributed leadership can be integrated and embedded into national leadership frameworks, with a focus on the relationship between distribution of leadership and its challenges and benefits for supporting sustainable innovation practices.

Conclusion

Sustaining high quality, equitable and affordable healthcare through innovation leadership, requires a collective form of leadership. Among individual NHS organizations, there is variable enactment of collective leadership, and its impact for adoption and scale of innovation is limited, requiring greater distribution of leadership and resources across the whole system. How this can be achieved at a systems-level has yet to be explored by the academic community, offering a potential area for future research focus.

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CHAPTER 10

Quantifying Financial Impact of Quality Improvement Programmes: Lessons and Limitations

Bernard Crump

INTRODUCTION

In the introduction to this book, a compelling case is made for the need for those who design and deliver health and care services to rise to challenges of both a moral and a financial imperative. Service users demand high quality healthcare services that are responsive to their needs and aspirations, whilst using an acceptable share of society's financial and human resources.

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This challenge has been framed in a number of ways. For example, a ‘triple aim’ has been advocated, through which three objectives are simultaneously pursued (Berwick et al., 2008):

- Improvement in the experience of those receiving care,
- Improvement in population health outcomes, and
- Reduction in the per-capita costs of delivering care.

The triple aim became a key component of the US Patient Protection and Affordable Care Act (ACA) in 2010 and influenced the development of the Health and Care Bill in England in 2020, following which a common duty was imposed on NHS bodies that commission or deliver services to consider the effects of decisions which they make on:

- The health and wellbeing of the people of England
- The quality of services provided or arranged by both themselves and other relevant bodies and,
- The sustainable and efficient use of resources by both themselves and other relevant bodies (DHSC, 2021).

Quality Improvement Programmes

Over more than two decades interest in, and experience of, the application of quality improvement (QI) to healthcare has grown. Familiarity with the language and many of the commonly used tools for QI is now the rule, rather than the exception, amongst management and clinical communities, and in many nations.

What has lagged is a convincing evidence base, discoverable in the peer-reviewed literatures which focus on health and care, and associated areas of academic discourse, to demonstrate the benefits arising from the use of QI. Even when the search is extended to less formally published findings, for example, reports of commissioned evaluations of QI projects, the results can be patchy. Specifically, it has proven particularly challenging to assess the financial impact of QI.

Given the scale of the financial pressures associated with health and care delivery across the globe, the extent to which adoption and investment in improvement methods can contribute to a more sustainable fiscal future is of pressing concern. In this chapter, I explore why developing evidence about financial benefit is proving to be so difficult. This chapter scopes the very limited literature about this issue and presents some empirical data from my own recent involvement with QI research. I conclude with a framework, inspired by recent publications, which may be of value to those seeking to design evaluation of financial impact of QI in the future.

The Financial Impact of Quality Improvement in Healthcare: The Evidence Base

Evidence that the implementation of QI interventions 'save money' came to the fore in 2009. In the UK, the NHS had enjoyed a period of six years of unprecedented increases in funding as the Government had adopted the recommendations for resources arising out of the Wanless review (Wanless, 2002). But the impact of the world economic downturn was now beginning to become clear, and prospects for continued investment, outstripping inflation and historical precedents, were looking bleak.

In this context, the Health Foundation, a UK-based charitable organization with expertise and interest in healthcare policy and quality improvement, commissioned a review of the evidence to that point. Prof John Øvretveit, Director of Research and Professor of Health Innovation and Improvement at the Karolinska Institutet in Stockholm, conducted the review, entitled *"Does improving quality save money?"* (Øvretveit, 2009).

The review was comprehensive, including nearly 400 published sources. Figure 10.1 is taken from the introduction to the review and illustrates in overview the approach taken to address the evidence base.

Figure 10.1 identifies four categories of evidence. In category 1, the review found a large number of publications which pointed to adverse events, or instances of poor-quality care; problems 'ripe' for improvement. Many of these studies stated or implied that there would be a beneficial financial impact if these problems could be reduced. Most took the perspective of the organization providing care in seeing the potential for savings to be made. A small proportion of these studies attempted to quantify this potential benefit in financial terms and to present evidence about the impact on the costs to be borne by the organization providing care.

In category 2, publications were identified in which evidence was presented about the effectiveness of interventions aimed at reducing

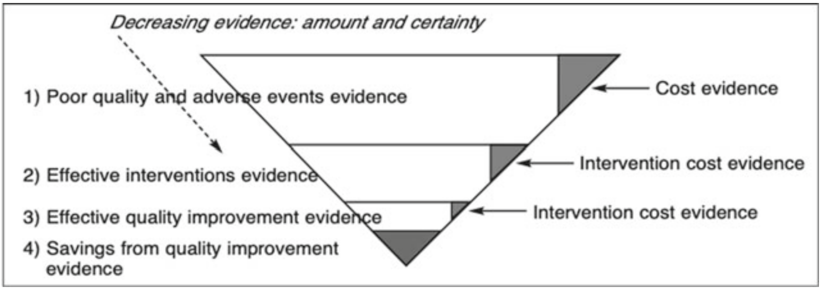


Fig. 10.1 Illustration of amount and certainty of evidence that quality saves money (*Source* Øvretveit, 2009, p. xi)

these adverse events or problems of quality. A wide range of interventions were used in these studies. These included approaches such as deployment of clinical audit and the development and implementation of practice guidelines, inspection and accreditation, training or increasing staff complements. In only a small proportion of these studies were data collected and presented on the costs of the intervention that led to improvements in quality.

Category 3 focused on a specific sub-set of improvement interventions that might be regarded as having at their core an approach arising out of ‘improvement science’. These included interventions that used the Plan-Do-Study-Act (PDSA) cycle; that were underpinned by analysis using Statistical Process Control (SPC), or were described as being based on well recognized approaches to quality improvement such as Six Sigma, the use of Lean management, theory of constraints or other similar philosophies. In defining this category, Øvretveit used a grouping of QI methods that had been developed by Boaden et al. in a commission from the NHS Institute for Innovation and Improvement (Boaden et al., 2008).

As with category 2, only a small proportion of these studies presented evidence about the costs of the intervention that was deployed, so it was difficult to draw firm conclusions about the overall costs and consequences of the intervention.

Category 4 was reserved for those interventions that had deployed QI methods, which had led to improvement and for which sufficient evidence was available about the costs of both the service impact and the intervention costs. These were small in number. Most of those reported were related to specific clinically focused interventions. For example:

- Savings in excess of the intervention costs associated with a fall in rates of surgical site infections from 1.8 to 0.4% (James, 1993);
- Improvements in the care of ventilated patients in Intensive care with substantial cost savings per patient (Young et al., 1998);
- Savings associated with more efficient use of operating rooms through reduced delays and cancellations (Øvretveit, 2000).

The review also identified a growing number of research studies focused on the obstacles, or occasionally the enablers, of interventions to improve quality or to reduce adverse events. Many of these also identified the challenge of sustaining any improvement that had been achieved from an initial ‘project’ and that of spreading improvements from an initial test site to other places which might benefit, even within the same institution. Financial considerations appeared in some of these publications. In some instances, this was to point out that an obstacle to widespread adoption of an improvement intervention was that the team, or organization, that had to invest in creating and delivering this intervention would not themselves benefit from any positive financial consequences of successful implementation, even though another part of the system might do so. In other publications, authors called for the design of more effective financial incentives to support the initiation, or the sustainability, of QI initiatives.

The issues relating to incentives to improve were discussed and analysed in a paper by Leatherman et al. (2003). In this study, the authors examined five cases in detail. All of the cases were situated in the USA. Respectively, they concerned:

- Management of high-cost medicines in a health system.
- New outpatient services to improve the management of newly introduced statin therapy for elevated blood lipids.
- Two initiatives to improve the management of diabetes.
- A smoking cessation initiative run by a Health Maintenance Organization.
- A wellness programme in the workplace implemented by General Motors Corporation.

The authors analysed these cases and the evidence that they had led to quality improvement, to a positive financial impact, or both. They looked at the speed with which these programmes became established, the extent to which they spread to other relevant parts of the organizations concerned, and the degree to which they were sustained. They conducted in depth discussion with stakeholders associated with the cases. And from these activities, they sought to identify some underlying principles.

In each of the case studies, the interventions delivered much more modest positive financial impact than had been anticipated. The project is noteworthy, because of some of the insights offered by the authors as to why this was the case; insights which remain relevant today.

The authors used the following operational definition of the term "business case" which appeared in the title of their paper "The Business Case for Quality…":

> A business case for a health care improvement intervention exists if the entity that invests in the intervention realizes a financial return on its investment in a reasonable time frame, using a reasonable rate of discounting. This may be realized as "bankable dollars" (profit), a reduction in losses for a given program or population or avoided costs. In addition, a business case may exist if the investing entity believes that a positive indirect effect on organizational function and sustainability will accrue within a reasonable time frame. (Leatherman et al., 2003, p. 18)

Leatherman et al. (ibid.) drew a distinction between a *business* case, as here defined, an *economic* case and a *social* case. By an economic case, they refer to the evidence, taking a societal perspective, that the overall benefits of the intervention outweigh the costs, after suitable discounting for the timing of costs and benefits irrespective of to whom that benefit might accrue; for example, the commissioner of services might see a financial benefit, even if the provider delivering the care does not see that benefit themselves. By a social case, they mean that the benefits accruing to individuals or to society in terms of improved health status are sufficient to make a case for the intervention, regardless of cost. However, at least in the setting of the USA and at the time of their work, they argued that for successful and sustained quality improvement to take place; those interventions needed to be underpinned by alignment between business case, economic case and social case. The fact that someone, somewhere else in the system of care would see a benefit was not sufficient for an organization to sustain an improvement if they were not seeing a return themselves.

Leatherman et al.'s analysis identified a number of ways in which, despite a strong economic case and a compelling social case, problems with the business case undermined organizational commitment to the improvements studied. These included a range of perverse incentives, in which payment or reimbursement to providers was solely related to the quantity of care and was not reflective of the quality of service delivered. In other instances especially in programmes focusing on prevention, the benefits would arise long into the future, and any reduced costs would advantage those responsible for care at that time, rather than the organization initiating the improvement. In further examples payers, be they individual consumers or institutional payers, struggled to perceive and value the benefits of the service being delivered. The authors proposed a series of institutional reforms designed, better to align the business case with the economic and social case. Leatherman et al.'s work has been influential in a range of subsequent initiatives to reform reimbursement in parts of the US health system through both the Patient Protection and Affordable Care Act of 2010 and the Medicare Access and CHIP Reauthorization Act (MACRA) of 2015.

The overall conclusion of Øvretveit's review is summed up in the opening paragraph from the abstract of its final report;

> Does improving quality save money? Sometimes, but sometimes not, and mostly we do not know because the research is limited. There is a great potential for savings, but it depends what we mean by quality improvement, who makes the savings and when. (Øvretveit, 2009, p. ix)

Since 2009

In the time since Øvretveit's seminal review, studies reporting the impact of QI interventions have been published in increasing numbers. Some of these studies have included estimates of the cost impact of these improvements.

Table 10.1 summarizes the findings of four such studies. These include a series of studies in which aspects of surgical care have been subject to a range of QI initiatives, along with a systematic review which examined the financial and economic impact of the use of Quality Improvement Collaboratives, sometimes known as Breakthrough Collaboratives, in which organizations and individuals work together in pursuit of a healthcare improvement, sharing experience and learning. The four studies presented in Table 10.1 expose a number of common themes, which echo Øvretveit's findings. First, it is relatively uncommon for evaluations of the impact of QI interventions to be accompanied by analysis of costs and benefits. Second, when they do there are often shortcomings in the way such analyses are conducted. In particular, the costs and opportunity costs of the intervention itself are often not measured in a robust way. Furthermore, the ways in which costs and benefits are ascribed to process changes associated with the programme of improvement can be questioned. Third, the synthesis of the elements of economic analysis into metrics which describe the costs and consequences of the intervention vary between studies, which means it is very challenging to draw conclusions across a range of studies. Much of this difficulty relates to the relatively unsophisticated systems available to those conducting research, and to those delivering care, by which the cost of the care delivered to cohorts of service users is monitored.

QI initiatives are complex and implemented in an iterative way. Context, therefore, makes a very important contribution to the outcome of the intervention. Nonetheless, more could and should be done to build the evidence base in this area.

Is This Problem Unique to Healthcare?

A major review of the literature on the retrospective assessment of the economic value arising from process improvement initiatives in manufacturing companies identified 35,968 scholarly articles published between 1980 and 2020 concerning the application of quality improvement methods, including Lean, Six Sigma, Total Quality Management and "Just in Time" manufacturing in manufacturing settings (Wemmerlöv, 2021).

Of these, 84% included mention of financial benefit arising from the intervention in the body of the article. However, in only 771 articles were claims about financial benefit described in the title or abstract. When these articles were reviewed, only 109 were deemed to include an analysis of the economic impact of the QI intervention. 75 of these publications studied large groups of firms and examined the relationship between finances at the corporate level and the extent of adoption of QI practices. This left 34 studies in which the financial costs and consequences of the use of one or

Table 10.1 Studies reporting the financial and economic impact of QI interventions

Intervention(s)	*Findings*	*Limitations*	*Authors*
Five-year programme of Rapid Process Improvement Workshops (RPIWs) with improvements incorporated into a new pathway of care	Shortened length of hospital stay and removal of the need for post-operative intensive care. The average cost per patient fell from $62k prior to the programme of improvements, to $34k for a cohort studied when all improvements had been instituted	This was a "before and after" comparison and no attempt was made to quantify the costs and opportunity costs of the programme of improvement itself	(Iannettoni et al., 2011)
A programme of QI that combined Lean and Six Sigma improvement methods. Improvements were combined into a new clinical care pathway	The care of 48 patients managed under the new pathway was compared with a retrospective cohort of 79 patients cared for before its introduction. Length of stay fell from 18.9 days to 10.6 days, which was judged to be statistically significant and could not be accounted for by differences between the groups studied An extrapolation was made, using the average per diem cost of an inpatient hospital stay in Italy (€674), that these improvements would "result in average cost savings of €260,000"	No estimates made of the cost, or the opportunity costs of the intervention. No analysis of actual local care costs, nor a justification for the use of a generic 'average cost per day' to make this projection of 'savings'	(Improta et al., 2015)

(continued)

Table 10.1 (continued)

Intervention(s)	*Findings*	*Limitations*	*Authors*
A series of Rapid Process Improvement Workshops (RPIWs), aimed to improve processes of care and reduce delays for elective surgery	The cumulative impact of the programme of RPIW events was assessed in two ways. The Return on Investment (ROI) from the programme was estimated by comparing a detailed analysis of the costs and opportunity costs of the programme with three markers of financial impact. These were the income to the hospital from providing these procedures, costs of overtime pay (which had been used to bolster capacity) and costs of staff sickness absence (as a proxy for staff experience). In both hospitals the ROI was negative, with the costs being greater than the "returns" In the second form of analysis, they studied the impact of the RPIWs on processes of care using Interrupted Time Series Analysis, examining performance prior to, during, and for a year following the intervention	The authors concluded "any apparent improvement in productivity or cost saving did not appear to be systematic or sustained."	(Chan et al., 2020)
64 published reports of the use of QI Collaboratives in which organizations and individuals work in collaboration to pursue a quality improvement objectives	Cost, and economic impact were studied in only eight of the 64 publications. Using standard frameworks to assess the quality of the economic and financial analysis four of these were considered high quality reports and two each were judged of medium or low quality. In five studies favourable cost benefits were reported	The authors sought to transform data to a common currency and time base, but acknowledged generalisability of these results to other settings and systems of care would be very limited	(de la Perrelle et al., 2020)

more QI methods were studied for an individual company, representing 0.09% of the total body of publications.

In only four of the studies were the costs of the quality improvement intervention itself recorded. In all of the studies at least some, if not all, of the financial measures quoted were derived from estimates (e.g. the average hourly cost of a worker) rather than directly measured costs. Only two studies provided information about the sources for the data that they presented, and only three involved finance and accounting staff in the validation of cost and benefit data.

Based on these findings, and on calls elsewhere in the literature for the development of design principles and agreed methods for studying the financial impact of QI interventions, including in healthcare (e.g. D'Andreamatteo et al., 2015), Wemmerlöv goes on to propose a design for studies of this type in the future. We discuss this approach and alternatives, later in this chapter.

Suffice to say that, in light of the paucity of evidence from Wemmerlöv's (2021) review, which focused on manufacturing, a sector which should be less complex, and in which there is perceived to be an acute focus on quality, costs and the relationship between the two, and a commercial imperative to understand value and to minimize cost, it is perhaps not surprising that we see little by way of effective evaluation of the financial consequences of QI in healthcare. We reflect upon such attempts in a research study with which I was involved below.

Empirical Context: The Virginia Mason NHS Partnership

Over the last three years, I have been a member of a team that has been evaluating the impact of a partnership between the NHS in England and the Virginia Mason Institute (VMI). Briefly, the Virginia Mason Institute (VMI) is an educational consultancy, which was established by the Virginia Mason Franciscan Health System to provide training and support in the approach to healthcare improvement and leadership employed by that system. Since the early 2000s, Virginia Mason has been working in partnership with Toyota to develop an approach to the delivery and improvement of services which they call the Virginia Mason Production System (VMPS). Inspired by 'lean', the VMPS is a systematic approach to the application of a suite of improvement methods to service delivery. The experience of developing the system and some of the impact on the performance of Virginia Mason have been studied, most notably in a book published in 2013 by Paul Plsek (2013)

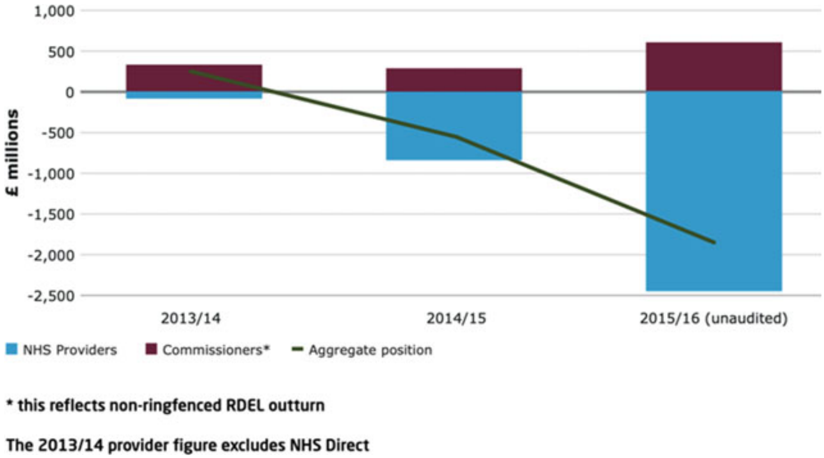
In 2015, VMI were commissioned to work, over a five-year period, with five NHS hospitals, to support them in adapting and adopting these ways of working. Some three years into this partnership, a team from WBS, led by Dr Nicola Burgess, was commissioned by NHS England and the Health Foundation, to evaluate the impact of the partnership. The evaluation concluded in 2021 and a summary report of the evaluations findings is now available (see Burgess et al., 2022). In this chapter, I focus on the element of the evaluation which sought to describe the financial impact of the partnership.

Financial Deficits and the Improvement Imperative

The partnership was launched in 2015 at a time when the NHS was under extreme financial pressure. The King's Fund, a respected health commentator published in 2016 a report "Deficits in the NHS" (Dunn et al., 2016). Figure 10.2 originates from Dunn's report and shows the scale of the financial deficits facing NHS organizations and the sharp rate of deterioration in the financial position at this time. Hospitals, included in the NHS Providers data, were particularly under pressure. Thus, we might expect financial considerations to be a priority, following which those providers engaging with VMI would seek to assess its financial benefit, even more so given the financial deficit they experienced.

The five NHS hospital trusts that became members of the NHS-VMI Partnership each reported a deficit in their accounts for financial year 2015/16, ranging in absolute terms from £6.5M to £33.7M. It was perhaps, then, surprising that no explicit expectations for improvement in financial performance were set as goals at the outset of the partnership. But this was not an oversight. In interviews held with those leading the organizations as CEOs and their counterparts from NHS Trust Development Authority and its successor body NHSE & I who sponsored the work, the decision not to set goals for the partnership couched in financial terms was deliberate.

> By the end of the five years we expect each Trust to have sufficient capacity in their organizations to build on this journey themselves without necessarily getting support externally. They will have a sustainable culture of



* this reflects non-ringfenced RDEL outturn

The 2013/14 provider figure excludes NHS Direct

Fig. 10.2 Financial position of NHS bodies, 2013/14 to 2015/16

> continuous improvement. The journey – they can carry on themselves. (NHS Improvement Respondent)

> We had a long debate about this – but we agreed—we hope to see improvements across three areas; quality of care, staff morale, and financial position, but we aren't going to say you have to be a certain point by the end of the partnership. (NHS Trust CEO)

Reviewing the evidence from interviews with those involved in the partnership, from the documents about the partnership at its outset, and from non-participant observation of meetings of the Transformation Guiding Board which oversees the partnership, some of the reasons behind these decisions emerge.

First, there was a clear concern that the engagement and motivation of frontline practitioners which would be essential for the partnership to succeed would be undermined if a prime objective of the partnership was to deliver financial savings.

Second, a recognition that translating improvements in performance of one part of the hospital, or one care pathway, into attributable changes to specific budgets or expenditure, would in itself be a challenge. For example, if a specific intervention led to reduction of in-hospital length of stay for patients with a particular condition, and there were no adverse consequences, such as an increase in unplanned readmissions to hospital, that would be a positive change. However, how this would impact on the costs of delivering care, on budgets, and on the overall financial position of that service, would depend on a number of factors beyond the improvement intervention. Closing one or two beds on a ward as a consequence would have a marginal financial impact, unless the results of many such improvements could be brigaded together across a number of settings, to allow a whole ward to close, with the associated step costs. Using the capacity freed up to treat more patients may be a more likely outcome, at least in the short term. The financial consequences of doing so will depend on the costs of treating those additional patients, the willingness and ability of those commissioning services to pay for that activity and the relationship for the hospital between that income, and the costs that they actually incur.

Third, participants recognized that the way they would be encouraged to work by their VMI partners would be to look at particular care pathways, or value streams. Using RPIWs and the tools to which they were introduced by VMI, they would design improvement interventions for patients on these pathways, and would conduct a series of experiments to assess the impact of these changes, adopting and spreading those that worked and abandoning those that didn't. These tests of change would focus on small cohorts of patients initially. It was recognized that detecting the financial impact of these changes in the overall financial position of the hospital as a whole, would be very challenging. Each of the hospitals was beginning to adopt more sophisticated 'patient level costing' tools. But, whilst the importance of these developments was recognized, even in a system in which no patient-specific 'bill' is raised at the end of an episode of care, the information systems necessary to attribute costs, especially non-direct costs, to individual patients was in its infancy.

At the Time of the Launch of the Evaluation

The evaluation of the VMI NHS partnership was conceived and commissioned after the partnership had been in place for two of its expected five years. The commissioners of the evaluation were interested in all aspects of the impact of the partnership and they included financial and economic impact of the partnership as a requirement.

The desire to collect data about the financial and economic aspect of the partnership proved challenging. There was no collection of bespoke financial data in the period prior to the start of the partnership and during its first two years. There were no control, or non-intervention, hospitals identified for comparison purposes. Partner hospitals, whilst they welcomed the evaluation and engaged with it enthusiastically, remained reticent about trying to attribute financial consequences to their membership of the partnership, or to the improvement activities in which they were engaged. These hospitals, in common with all other hospitals in England, were subject to annual changes in the financial regime for the service. These resulted in changes to the tariff; the mechanism by which hospitals were reimbursed for the patients that they treated, and these changes had both a national and a local component which differed between sites.

In common with all hospitals in England, partner hospitals made routine data returns on a wide range of issues, including in relation to their financial performance at the overall organizational level. Some of this data was disaggregated to a more segmental level, such as the specialty. Following a review of 'operational productivity' in NHS hospitals led by Lord Carter in 2016 (Carter, 2016), the NHS published a range of new productivity measures for inter-hospital comparison. Foremost of these is a measure of 'Cost per Weighted Activity Unit' (Cost per WAU). The innovation here is in being able to weight the amount and type of clinical activity delivered by different hospitals in order to take account of these differences when comparing their costs. We explored extensively the potential to use this indicator to examine the extent to which an individual partner hospital changed in its apparent productivity over the life of the partnership. And further, whether the five partner hospitals as a collective, or an individual partner hospital in comparison to a group of ten similar 'peer' hospitals, deviated in the measure of Cost per WAU during the partnership.

Unfortunately, these analyses were frustrated by a policy decision to refine the Cost per WAU metric annually, and to rebase the measure, meaning that longitudinal comparisons were not possible. The measure has potential, and it is planned in time that it will allow comparisons at a specialty level, and even at the level of specific diagnoses and procedures, but it could not allow us to make valid conclusions for our evaluation.

Overall, whilst our analysis of data derived from a wide range of quality improvement interventions instituted by the five trusts showed evidence of improved processes of care, with the exception of the case examined in the following section, we were unable with confidence to draw any robust conclusions about the financial and economic impact of these changes.

Likewise, our interrogation of routinely collected data, including financial data, did not show evidence of financial or economic benefit, which could with confidence be attributed to their membership of the partnership. The financial health of the five hospitals changed in both absolute and in relative terms during the lifetime of the partnership, but in ways which were not consistent. To the extent to which these changes were observed they seemed to be associated with changes both in national and local market conditions.

Capturing Economic Impact: A Case Study

Leeds Teaching Hospital Trust (LTHT) was the largest of the five NHS-VMI partner trusts and chose to look more closely at the financial impact of its improvement work from 2017/18 onwards. A number of factors may have contributed to this decision. First, the trust expressed confidence in the impact that their membership of the partnership was having by this stage and they were vocal advocates for the approach. Second, a new Finance Director with prior experience of working in healthcare organizations that had adopted ‘lean-inspired’ improvement methods, joined the Trust in 2017.

In common with all hospitals, LTHT had an annual programme of ‘cost improvement targets’. These were discussed with, and agreed by, the different Clinical Service Units (CSUs) in the organization and the finance team would work with the units to monitor progress. In 2016, now as a partner in the programme, they conducted extensive engagement with their staff. One result of this was that the programme of cost improvements was reframed to be a ‘Waste Reduction Programme’.

The finance team developed a Waste Reduction Tracker Tool. At the beginning of the financial year, a programme of waste reduction was agreed. Some of this was managed as a series of centrally coordinated trust-wide programmes, but much of it was designed, delivered and owned by the CSUs.

One component of the Waste Reduction Tracker tool was the facility for the leaders of the CSU, typically a senior doctor, senior nurse and general manager, to agree with the finance team what proportion of the waste reduced should be attributed to activity arising from the Leeds Improvement Method (LTHTs branding of their adopted and adapted version of the VMPS). Each waste reduction activity was categorized into one of five categories:

1. **Business decision**: typically, a strategic, organization wide policy decision leading to improved income, lower costs of goods or services or a major shift in policy.
2. **Value Stream related**: waste reduction directly arising from the decision, taken with VMI, to focus on specific pathways which were subject to value stream mapping and the conduct of a range of RPIWs leading to improvement in performance and waste reduction.
3. **Scale Up and Spread**: waste reduction arising from the purposeful and coordinated diffusion and implementation of a successful improvement from one organizational setting to another.
4. **Training Inspired**: waste reduction arising because staff had been trained in Leeds Improvement Methods and had applied these in their workplace to bring about improvement.
5. **Other tactical**: a catch all category for any other waste reduction.

All tracked initiatives were systematically reviewed with the finance team, the programme office for the partnership and the CSU team monitoring the progress of the initiative, conducting a series of quality impact assessments and confirming the financial consequences. These could be in the form of directly reduced costs, including avoidance of temporary staffing, consumable costs, etc. Where capacity was freed for additional patient activity the net margin associated with that activity was recorded.

Waste reduction associated with categories 2, 3 and 4 were attributed to the Trust's membership of the partnership. In September 2019, LTHT shared the results of this work with the other members of the partnership and the evaluation team. Table 10.2 shows these results. Where a waste reduction occurred part way through a financial year, the absolute value was recorded, and a full year effect was attributed.

In June 2020, the Trust updated this analysis to show the impact of the waste reduction they had recorded for the 2019/20 financial year. In this updated analysis, they had chosen to combine category 2 and category 3 attributed activity and the data shown is a full year effect. Both categories of waste reduction are reported to have been increased substantially during this second year of managing waste reduction in this way.

Table 10.2 Financial benefits attributed to the Leeds Improvement Method 2018/19

Delivery method	*Full year effect*	*18/19 effect*
Value stream	£309,979	£309,979
Scale up and spread	£4395	£2552
Training inspired	£1,475,468	£1,020,904
Total	**£1,789,842**	**£1,333,435**

In particular, waste reduction attributed to be training inspired increased nearly ten-fold (Table 10.3).

As evaluators we worked with LTHT to identify the costs of their engagement with the partnership for a one-year period. We recorded direct costs, including the staffing costs of the programme office that managed the partnership within the Trust, the costs of support from VMI (which were largely met by NHS England & Improvement but were apportioned across the five partner trusts for this exercise), and the costs of travel and accommodation for those staff who visited Seattle to be trained in how to run the programme and how to deliver in-house training. We accounted for the indirect costs of time devoted to training or to programme activity away from the clinical workplace for staff trained in the method or engaged in improvement work. And we accounted for the time spent by the CEO in contributing to national programme governance, and to the remaining trust executives in local governance of the programme. This analysis, details of which are available, led to a cost estimate for Leeds Teaching Hospital Trust of £1,100,463 for their engagement in the programme for 2019/20. When combined with the Trust's estimate of the waste reduction that they attributed to the programme for that year, this leads to a Return-on-Investment estimate of £15.41 for each pound invested in the programme. (Note, the onset of the COVID-19 pandemic in March 2020 has meant that comparable

Table 10.3 Financial benefits attributed to the Leeds Improvement Method 2019/20

Delivery method	*Full Year Effect 2019/20*
Value stream, scale up and spread	£2,738,376
Training inspired	£14,228,293
Total	**£16,966,669**

figures are not available for the most recent financial year, which was the final year of the partnership.)

We caution our ROI estimate has some limitations. Foremost of these is that it relies on the accuracy of the attribution of the waste reduction observed to the Leeds Improvement Method. It is interesting that the most significant contribution to this has been attributed to the ‘Training Inspired’ category. Once the trust had developed the in-house capability to deliver this training, the indirect costs of training very substantial numbers of their staff were very small, whilst RPIWs, which require more formality, preparation and the attendance of clinical staff for several consecutive days, are more costly, perhaps echoing some of the evaluations discussed in the review of the evidence base.

The Trust reported an overall financial position for 2019/20 with a financial surplus for that year of £13.9M (LTHT, 2020). In its Annual Report & Accounts, it attributes much of this improvement to its waste reduction programme. Across all the categories of waste reduction LTHT reported the delivery of £54.5M, with £17M attributed to the Leeds Improvement Method, consistent with the information that was shared with the evaluation team. The fact the finance team at LTHT stand behind these analyses in their formal statutory accounts is significant.

Given this empirical experience and reflecting on the evidence base, how might future studies, be they for academic publication or to direct intervention in health systems, be designed to assess the financial and economic impact?

Implications for Practice

How Can the Financial and Economic Impact of Quality Improvement Be Assessed?

Studies in healthcare commonly propose a Return-on-Investment analysis of quality improvement initiatives, emphasizing relevant metrics are those that can be “measured, monetized and attributed” to the intervention in whole or part (cf. Solid, 2020), such as staff productivity, efficiency improvements and increased revenue (cf. Shah & Course, 2018). At same time, but without specifying ‘how’, such studies encourage us to move beyond ‘mere’ financial considerations, to encompass patient, carer and family, and staff, experiences of quality improvement. A hallmark of the work is that, where clinicians and finance colleagues work closely together on these projects, an approach to defining value can be developed that operates at multiple levels and guides decision making (Shah & Course, 2018). Along such lines, a practical framework for achieving value creation and capture in healthcare through process improvement developed in Australia is one that likely proves useful for practitioners and academics evaluating quality improvement interventions (Evans et al., 2022).

Evans et al.'s framework (Fig. 10.3) proposes a five step process to establish and implement an enterprise wide approach to the delivery of greater value. It seeks to explicitly recognize the role played by 'contributory technical, social and policy elements' of quality improvement to which the organization needs to pay attention in its deployment of the framework.

Within the case organization from which the framework derived, it was revealed that, despite the organization having a strong reputation for process improvement and for realization of financial benefits, it operated two parallel processes, with different lines of accountability. One focused on a programme of process improvement goals; the other on the organization's 'Economic Sustainability Strategy'. This proves ineffective in

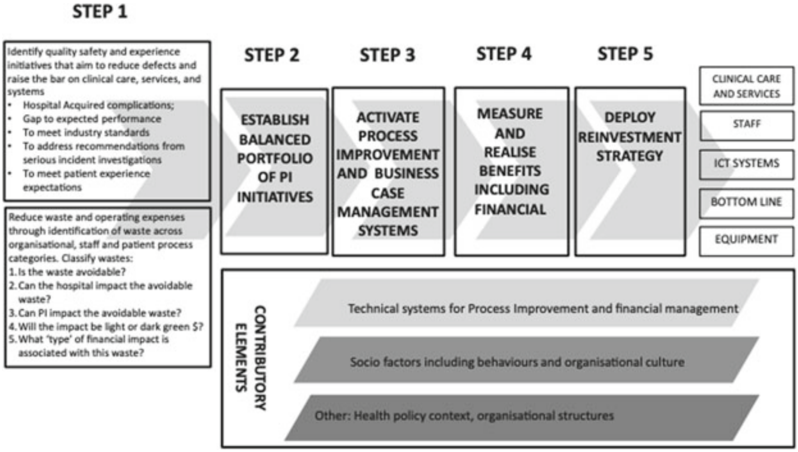


Fig. 10.3 Framework to achieve value in healthcare (*Source* Evans et al., 2022, p. 573)

assessing a realization of benefits of quality improvement, and organizations are recommended to institute a portfolio of initiatives that come under a common system of accountability. Yet again, the question of 'how' this is realized is left unanswered.

Perhaps we are better to consider studies and frameworks outside healthcare and seek to contextualize them for the healthcare case. One such framework is that developed by Wemmerlöv, who identifies nine principles that he argues should be followed in studies of quality improvement (Wemmerlöv, 2021). These are shown in Table 10.4 outlines each principle alongside a brief explanation of the principle's meaning.

Wemmerlöv's nine principles for capturing the financial and economic benefits of QI outlined in Table 10.4 were made in the context of the design of the evaluation of the financial and economic impact of quality improvement initiatives for manufacturing firms. They would need some translation into the context of healthcare. In particular, the concept of 'sales' would need to be interpreted, especially as many improvement initiatives in healthcare may have the objective of reducing activity, particularly unwarranted activity. The question in principle seven about the narrowness of the system boundary drawn for analysis also merits close consideration, especially as health services seek greater system integration. An initiative that leads to a financial improvement elsewhere in the system of care, or for a patient or service user in terms of the avoidance of future costs, is still of great interest and value. Nonetheless, this series of principles could form a useful basis for consideration by those responsible for looking at the financial and economic impact of a quality improvement.

Conclusions

For quality improvement to build on its success and further to enhance its credibility, it is important to strengthen the evidence base that underpins its value. As we have seen, it is still uncommon for quality improvement initiatives, and the financial and economic impact that can be attributed to them, to be shared in the peer-reviewed literature. Each intervention, and the context in which it is conducted, is unique, but the adoption of more purposeful measurement and rigorous analysis, interpreted in the light of that unique context, can help to grow the corpus of knowledge about the place and contribution of quality improvement to contemporary healthcare challenges.

Table 10.4 Summary of Wemmerlöv's nine principles for capturing the financial and economic benefits of QI interventions

Principle	*Meaning*
1. Consider resources paid for, not resources used	An organization pays for the capacity it provides, whether it is used or not. So analyses that focus on reductions in unit cost, following an improvement initiative, and ignore unused capacity, overstate the impact
2. Consider changes both to resource levels and activity volumes	In "before and after" studies of quality improvement initiatives changes in activity as well as in resources used need to be accounted for
3. Consider both costs and revenues	The impact of the quality initiative on the costs of delivery should be measured, but also the impact on "sales"
4. Consider variability in both the volume of delivery and in "sales" before and after the initiative	Activity has a level of inherent variability and the period in which it is measured before, during and after the quality initiative should be sufficient to enable the effects of inherent variability to be taken into account before conclusions are drawn
5. Consider variability in price and resource consumption per unit	Trends and factors unrelated to the quality initiative itself will affect costs and the contribution of these factors needs to be taken into account
6. Consider costs of the change initiative itself	It is important to factor in the costs of the quality initiative itself, including opportunity cost
7. Consider drawing narrow system boundaries for the analysis	Results of the analysis and the extent of a causal link between the intervention and the financial consequences will be more convincing if analysis is focused narrowly on those processes affected by the intervention
8. Consider the regular monitoring of both financial and non-financial data	Results of the analysis may need to be interpreted through an understanding of factors beyond the improvement initiative itself that happened during the course of its implementation. This is made possible if such features are regularly monitored

(continued)

Table 10.4 (continued)

Principle	*Meaning*
9. Consider and accept imperfection	There is a trade-off between the sophistication, cost and time of the evaluation and the requirement for insight to direct action

Whether conducted prospectively as part of the process of making the case for an intervention, or retrospectively when the impact of the intervention should be visible, supplementing the assessment of the impact on healthcare outcomes with an evaluation of economic and financial impact should become routine. As health systems transform and adopt more systematic ways of working across systems to improve care, part of the conversation should be about how the economic dimension of evaluating impact should be conducted, interpreted and shared. Engaging the finance profession in these conversations from the outset is vital. They have expertise in measurement in this arena, and their professional perspective on the interpretation of the evaluation is essential if quality improvement is to thrive and spread. The development of shared understanding and common approaches to these questions, along with a nuanced appreciation of the limitations of evaluation in this field, should be regarded as a priority for those leading health systems.

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CHAPTER 11

The Role of Quality Improvement in Sustaining Healthcare During Crisis

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Healthcare Operations During Crisis—The Impact of COVID-19

In the United Kingdom, over 549,570 people received in-patient hospital care for COVID-19-related illness from the beginning of the pandemic to October 5, 2021 (UK Government, 2021). In responding to the pandemic, healthcare systems were faced with unprecedented demand to treat an unknown and airborne disease that could potentially lead to

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hospitals being overwhelmed with acutely ill patients. In parallel, absences among healthcare staff increased, peaking at 6.2% in April 2020 (National Health Service, 2021). Fear that hospitals wouldn't have enough staff, beds or ventilators to treat patients, or enough personal protective equipment to protect staff from acquiring the disease, was palpable in the UK, across Europe and around the world.

The challenge of responding to COVID-19 was further compounded by the need to continue to diagnose and treat other acutely ill patients despite the unfolding crisis. Operationally, hospitals needed to rapidly reconfigure the way they organized services to cater for both COVID-19 and non-COVID-19 patients, avoiding hospital acquired infection. COVID-19 created an operational environment of rapid change under conditions of heightened uncertainty and anxiety which can lead to poor management decisions with devasting consequences for the safety and wellbeing of patients and staff, alongside lasting reputational and economic damage (Azadegan et al., 2013; Kapucu & Ustun, 2018).

Understanding how a systematic approach to QI supports crisis response is critical to sustaining healthcare delivery, as hospitals continually face crises (e.g., winter flu pressures, patient safety incidents). Leveraging QI as a response to crisis is not farfetched. When implemented systematically across the organization QI can facilitate management practices that foster management of human-related issues, which reinforces the decision-making capacity needed by leadership and employees during a crisis (Cua et al., 2001; Kapucu & Ustun, 2018). A focus on human resources, management systems and organization culture can support organizations to mitigate the operational effects of crisis (Pearson & Clair, 1998; Shrivastava, 1993). Further, scholars have argued that success or recovery post crisis is influenced by the effectiveness of leadership and management systems (Vaughan, 1990).

Towards Quality and Efficiency: Adopting a Systematic Approach to QI

QI practices are intended to improve operating efficiency *and* enhance care quality through the reduction of errors, processing time, costs, and other resources (Collins & Browning, 2019). A systematic approach to QI has been associated with some of the world's best performing hospitals (Brandao de Souza, 2009; Radnor et al., 2012; Shortell et al., 2021).

In the UK, the few hospitals rated ‘outstanding’ by the healthcare regulator were each found to have an established system-wide approach to quality improvement (Care Quality Commission, 2018). Yet studies have shown that only a small percentage of hospitals have adopted a systematic approach to QI across the whole organization (Burgess & Radnor, 2013; D’Andreamatteo et al., 2015; Shortell et al., 2018).

Anand et al. (2009) characterized a systematic approach to QI as a dynamic capability, facilitated by an explicit improvement infrastructure, where routines and practices align improvement activity to organizational strategy, foster leadership engagement and inter-professional collaboration and embed improvement capability for sustainable competitive advantage. This holistic perspective supports the socio-technical characteristics of QI approaches such as lean, crucial to nurturing a system-wide and sustainable improvement culture (Bortolotti et al., 2015; Johnson et al., 2020; Shah & Ward, 2007).

Engaging senior leaders and doctors in QI implementation is vital, yet resistance of these influential actors remains a frequently cited barrier (Cua et al., 2001; Fournier et al., 2021; Lindsay et al., 2020). Resistance to QI methods has been prevalent among doctors, who wield more power in healthcare organizations than other medical groups (Currie & Spyridonidis, 2019), and actively resist managerial encroachment on their professional practice (cf. Currie et al., 2009; Hartzband & Groopman, 2016). Indeed, a critical shortcoming of QI implementation in hospitals has been a managerial inclination to equate QI implementation with efficiencies in the form of cost reduction, rather than value creation in the form of better care quality (Dixon-Woods & Martin, 2016; Hines et al., 2004). Thus, senior managers looking to QI to deliver cost improvements in the short term are unlikely to sustain commitment to QI over the long term.

That systematic QI encompasses leadership training and mentoring is a growing area of interest, but one that has been largely overlooked to date (Mann, 2009; Netland et al., 2020). Central improvement teams have been identified as key enablers of a systematic approach to QI (Malmbrandt & Åhlström, 2013). The improvement team bridges the gap between the social and technical elements of QI. Sometimes referred to as ‘change agents’ or ‘peripheral knowledge specialists’, this central team of technical experts is also responsible for training leaders and employees in the technical elements of QI that facilitate process improvement. Commonly, organizations establish a specialist improvement team as a central resource that facilitates improvement activity at an operational level, while spanning leadership boundaries to link improvement activity with organizational strategy (Malmbrandt & Åhlström, 2013). Thus, the improvement team are custodians of the QI method for the organization; their role is to ensure QI methods and tools are employed in ways that support alignment between organizational goals and local improvement activity.

To reiterate, the objective of our chapter is to illustrate the role of quality improvement in sustaining healthcare during crisis. In the next section, we outline our empirical context prior to presenting our research findings.

Empirical Context—The Case of Five English Hospitals

In July 2015, the Secretary of State for Health and Social Care announced the commencement of a unique five-year partnership between the NHS and a specialist improvement partner, to develop a systematic approach to QI within five English hospitals. The improvement partner is a not-for-profit consultancy arm associated with a hospital based in the United States. The United States-based hospital had gleaned a reputation for being one of the safest hospitals in the world, which it attributes to its adoption of a systematic QI approach. This QI approach represents an adaption of the Japanese manufacturing methods of lean derived from auto manufacturer Toyota; elements of this QI approach have been articulated as a popular Harvard Teaching Case Study (cf. Bohmer & Ferlins, 2006) and have also been the subject of management books (cf. Kenney, 2012), and a number of publications authored by executives and associates of the improvement partner (cf. Kaplan, 2020; Sethi et al., 2017).

The partnership facilitated the development of a quality improvement programme in each of the five partner hospitals. The same quality improvement programme was implemented in all five hospitals, which allowed for a comparison of these hospitals prior and post-COVID-19. An organization-wide approach to QI was employed consisting of various routines and mechanisms that targeted social (i.e., strategic and human-related) aspects of the hospitals such as leadership and process improvement, as well as the technical aspects of improvement (i.e., building QI capability and facilitating improvement via the implementation of QI practices and tools. The programme spanned all levels of the organization, from senior leadership to middle managers and frontline health professionals, with the aim of developing a '*sustainable culture of continuous improvement capability*'. When COVID-19 forced a national lockdown in March 2020 each of the five NHS hospitals had nearly five years of experience implementing quality improvement methods in a systematic way. Given the prior engagement of the authors in evaluating the implementation of QI in these five hospitals, a unique opportunity to explore the role of QI in the context of a crisis was presented. Data collection took place at a time best described as a brief hiatus for hospital staff, following the 'first wave' of COVID-19 in the United Kingdom. While the pandemic was by no means over, hospital admissions had fallen greatly, and the NHS had successfully averted being overwhelmed as initially feared.

In the following section, we present findings drawn from approximately 20 hours of observations of meetings between senior healthcare leaders and 40 semi-structured interviews with senior leaders and frontline professionals (approx. eight interviews per hospital). Findings are presented under four headings: how QI enhanced top-down leadership during crisis; how crisis enhanced the engagement of senior leaders and doctors with QI; how crisis amplified the use of QI tools and practices; how improvement specialists became a highly valued peripatetic knowledge resource during crisis.

How QI Enhanced Top-Down Leadership During Crisis

As news of the novel coronavirus outbreak emerged in December 2019, the UK government established a mandate for NHS hospitals to implement a top-down command hierarchy consisting of strategic, tactical and operational units (also known as gold, silver and bronze command). Our respondents confirmed the visibility of the leadership hierarchy enacted during the crisis; but while clarity of leadership accountability and decision-making was highly valued, one CEO confessed '*as senior leaders we just didn't have the answers*'. The complexity and uncertainty surrounding the clinical treatment of this novel virus necessitated rapid and continuous bidirectional knowledge flows between frontline clinical leaders and the formal leadership hierarchy. Leaders in these hospitals achieved bidirectional knowledge flows by preserving the shared and facilitative approach to leadership fostered via the QI routines and practices instilled in the years prior. Cognizant that '*those who do the work, know best how to improve the work*', senior leaders remained committed to the facilitative leadership approach, encouraging problem-solving from the bottom-up as opposed to attempting to mandate solutions top-down. This problem-solving mantra became a beacon for leadership during the crisis.

Mechanisms that facilitated rapid and effective communication across organizational leaders at all levels were highly prized at a time where national guidance and hospital processes were frequently and rapidly changing. Executive leaders sought to preserve a shared approach to leadership by embedding QI daily management practices into their top-down leadership structure. This was achieved by embedding improvement specialists to work alongside senior leadership within the gold, silver and bronze command hierarchy. Consequently, the shift towards centralized leadership complimented rather than compromised, the established facilitative and integrative (multi-level) leadership approach that formed part of the QI infrastructure. A senior manager describes how the deployment and integration of improvement specialists into the command hierarchy facilitated rapid synthesis of information, rapid decision-making and rapid communication of decisions across the organization:

> When you have so much information, and so many tasks coming in, how do you kind of go through it in a systematic way, and then have a huddle where you can get very quick decision making, and then go get your decisions disseminated back out to the trust? That's all around daily management techniques. So, rather than trying to teach people about QI methods such as daily management, production boards etc., we just picked up two improvement specialists and put them to work alongside tactical control. Daily management techniques have continued to be used by those who were part of silver control at the height of the pandemic. (Senior Manager)

Leadership competencies necessary to support crisis management were also supported by other elements of the QI programme. Many respondents commented on the value of a shared improvement 'language' learned by employees who had completed the QI training programme that formed part of the improvement infrastructure. This improvement language, with its technical terms such as huddles, production boards, set-up reduction and standard work, became common parlance as leaders from disparate parts of the organization reaped the benefits of communication at pace, facilitating non-verbal hand-offs and enabling collaboration for rapid problem-solving.

> So, I think having a common language helps… [many] people relocated to work in different areas and changed what they were doing on a day-to-day basis. And so new staff 'huddles' were being created. And the fact is, a lot of people have said to me, we didn't have to explain to somebody what a huddle or a production board was, they had absorbed the language. (Improvement Specialist)

In sum, QI enhanced leadership competencies during the crisis without compromising the need for a visible, top-down command hierarchy and fostered effective and timely knowledge mobilization for collaboration across diverse professional groups.

How Crisis Enhanced the Engagement of Senior Leaders and Doctors with QI

Two of the five English hospitals in the study struggled with employee engagement in the QI programme prior to the pandemic. In both cases, organizational culture was considered 'poor', with respondents from one hospital frequently citing an 'inward looking culture, resistant to change' (Chief Nurse), and another where reports of bullying had been referred (and verified) by an independent auditor. However, these cultural challenges became less prominent during the crisis as all staff became focused on a common purpose. The pandemic had created a burning platform for change and a unifying clarity of purpose across the whole of the NHS; for the two hospitals that had struggled engaging senior doctors and leaders prior to the pandemic, the crisis presented an unexpected desire among senior doctors and managers for the acquisition of QI knowledge, methods and tools. The following quote from a senior NHS manager illustrates how the crisis gave QI the legitimacy it had otherwise failed to achieve:

> [QI] was central in the way that the hospital dealt with the pandemic. But the pandemic has been central in getting the [QI knowledge and methods] into everywhere…. (Senior NHS manager)

The same hospital provided an example of a temporary, multi-disciplinary team coming together to apply QI methods and tools to design (and then improve) a process for making protective face visors. During the pandemic, the hospital struggled to monitor the PPE[1] stock and meet delivery requirements, due to complex arrangements. Staff members redeployed from varied roles (including senior finance managers), decided to make visors to replenish the PPE stock. This resulted in a lot of set-up reduction as staff worked out a visor production line relying on the basics of the Toyota Production Line[2] which could initially produce about 100 visors. Over time, staff had used QI techniques to increase production to1000 visors a day.

In sum, the burning platform accompanied by a clarity of purpose enabled hospitals to overcome cultural factors that had previously stymied QI adoption. Subsequently, leadership commitment to a systematic approach to QI and employee engagement with QI methods were strengthened because of the pandemic.

How Crisis Amplified the Use of QI Tools and Practices

COVID-19 necessitated radical changes to the way healthcare was delivered. Some departments were stood down while others needed to rapidly expand; some clinical roles became redundant while others became overburdened. Temporally paced, strategic level improvement routines that allow time for reflection, learning and strategic planning were abandoned to respond to the unfolding crisis. As one of our respondents explained: "*we needed to make decisions quickly. So, we couldn't wait two weeks or one month for our team meeting. It just had to happen every single day*".

One of the four hospitals did not abandon all the lean-based strategic routines. As one of the largest NHS hospitals in the country with approximately 18,000 employees, this hospital was twice the size of the second largest hospital in our study. The central quality improvement team at this hospital was told to work from home rather than on the hospital site. Testament to the diffusion of QI capability via the QI training programme

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[1] PPE is an abbreviation for Personal Protective Equipment, such as face masks, visors and gowns necessary to minimize exposure to the virus.

[2] The reference to the Toyota Production line is representative of a QI approach known as Lean (cf. Ohno, T., 1988).

the hospital was able to draw upon extensive knowledge of operational QI practices embedded among the senior and clinical leadership teams to shape their organizational response to the crisis. The lead improvement facilitator explains:

> We seem to be a bit of an outlier among the five hospitals because our improvement facilitators have all been told to stay home…but I'm super proud of us as an *organization*. It really shows that we have belief in our QI method, that there is sufficient improvement capability now, embedded within our leadership team and on the frontline to use the improvement methods and navigate our way through the crisis. (Improvement Facilitator)

However, what was resoundingly clear was that all five hospitals amplified their use of daily management practices associated with QI. The rapid influx of patients with COVID-19 required many NHS hospitals in England to radically redesign their internal departments. A recurrent theme emerging from interviews was the sudden proliferation of daily management practices across all levels of the organization, specifically the use of QI methods and tools and practices such as production boards,[3] huddles,[4] set-up reduction[5] and standard work.[6] While daily management practices presented an effective and efficient means for cascading information, they were also instrumental to fostering dialogue and support among teams. The following quote illustrates reasons why these practices were amplified during the pandemic:

> I think from a QI tool perspective, the biggest thing during COVID that was helpful was production boards, to make sure that we made sure that all staff had transparency and good communication about where the patients were, where the clinical need was, so that we could redeploy [staff] and

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[3] A production board presents easy-to-understand information to enable frequent updates on the status of an operation 'at-a-glance'.

[4] Huddles are short multi-disciplinary briefings where team leaders come together to share clinical information, review events and plan for the day ahead.

[5] The process of reducing the amount of time needed to set-up a process.

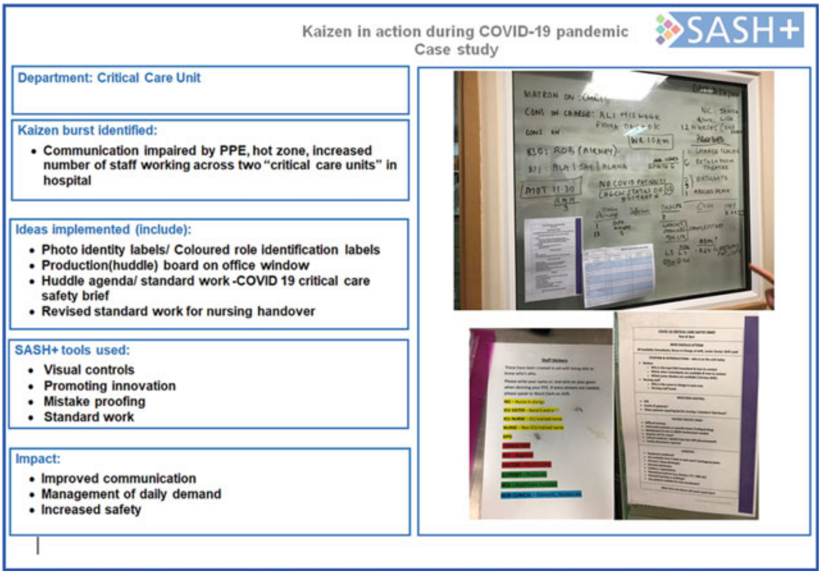
[6] Standard work refers to the documentation of process steps in an unambiguous manner to reduce variation in the way a process is conducted. While standard work is prescriptive about how work should get done, it can be updated if process improvements are identified.

> move quite freely. Widely on a daily basis, there was a regular huddle. There was a huddle in the morning. There was a huddle going on within teams at lunchtime. And there was even a huddle at the end of the day to make sure everyone was back. And we were all okay. So, I'd say the daily management tools were the most useful during COVID. (Middle Manager)

Huddles were usually done around the production board, as a quick stand-up meeting giving team members updates in national guidance, and a briefing on the day ahead. The value and utility of this popular management practice expanded to incorporate a safe space for staff to express anxiety and offer emotional support. Similarly, production boards were vital at communicating 'at-a-glance' the status of operations. At one of the five hospitals, a nurse took the initiative to turn a window to the ward manager's office into a production board to enhance the speed and quality of communication within her team. Remarkably, the team at this hospital also took the time to document the innovative process improvement as a case study for others to learn from (see Fig. 11.1).

We also saw extensive use of 'standard work' to enable all healthcare professionals regardless of specialism, to perform each other's role aligned to the latest best practice guidelines. Since the pandemic reduced the number of patient pathways and created high demand for intensive care, staff were rotated to work into different critical care units. This lack of prior experience or specialist professional knowledge, coupled with the wearing of PPE, impaired traditional ways of communication in place before the pandemic. Therefore, the creation of standard work enabled staff to work in new areas and perform new activities in ways that aligned to best practice. As one respondent told us, with high levels of staff sickness, high numbers of patients and patient acuity and high levels of staff rotation "*people needed to be able to come in at eight o'clock and crack on with the job without having to ask questions*".

The importance of standard work was reiterated throughout many interviews, and improvement specialists recounted how they were frequently called upon to write standard work documentation. When respondents were asked if there was anything they were doing now to prepare for future pandemics, one senior manager responded: "*we've got the standard work written now, we have moved from a stage of things [information] being all over the place to a continuous workflow with so many*



Kaizen in action during COVID-19 pandemic
Case study

SASH+

Department: Critical Care Unit

Kaizen burst identified:

- Communication impaired by PPE, hot zone, increased number of staff working across two "critical care units" in hospital

Ideas implemented (include):

- Photo identity labels/ Coloured role identification labels
- Production(huddle) board on office window
- Huddle agenda/ standard work -COVID 19 critical care safety brief
- Revised standard work for nursing handover

SASH+ tools used:

- Visual controls
- Promoting innovation
- Mistake proofing
- Standard work

Impact:

- Improved communication
- Management of daily demand
- Increased safety

Fig. 11.1 Use of production board and standard work documentation (Reproduced with permission from Surrey and Sussex Hospitals NHS Trust)

visual controls". Standard work was deemed pivotal to achieving a level of operational agility these hospitals had never imagined possible.

Set-up reduction was another QI tool extensively used to manage the crisis response. In critical care, set-reduction packs were created to reduce process times in delivering critical care. This practice also resulted in further innovations aimed to solve issues with set-up time in a unit that was running over capacity. Set-up reduction practices combined were used extensively to can improve healthcare delivery across the five hospitals.

> We did set-up reduction packs for bed space setting up, because in critical care we have over 100% bed occupancy in our unit. It was the idea of our staff members, and I can tell you in COVID those packs made a big difference. We've devised a visual aid for every bed space. We're trying to look at, we're doing rapid improvement cycles all the time. We're listening to staff, it's great. (Chief Nurse)

> [We used] set-up reduction to ensure the quickest possible delivery of equipment to our patients. So, it was all about having everything pre-packaged and pre-kitted so that when we had a ventilator patient or when we had a ward that flipped to be a COVID Ward, we would have all the equipment, and everything set up already. We wouldn't have to wait for that equipment. We'll just be able to grab a kit. deliver it, come back, grab a kit, deliver it come back…. (KPO Specialist)

The overwhelming message from our data analysis was that QI methods were used extensively across all five hospitals to improve the response of healthcare professionals to the crisis. In other words, the crisis led to an amplification of QI practices and tools. One CEO told us, "*production boards were literally everywhere!*"*;* another asserts: "*standard work is the nugget [sic] that we must hold on to, it needs to be systematic*".

How Improvement Specialists Became a Valuable Peripatetic Knowledge Resource During Crisis

In all but one hospital, the quality improvement teams transitioned from a centralized resource to become peripatetic knowledge specialists situated among frontline clinical teams. Prior to the pandemic, the improvement team operated as a centralized support function, facilitating training and planning and delivering improvement projects and workshops. During the pandemic the improvement team worked in a situated way, drawing in clinical professionals to work alongside them.

> The [improvement specialists] were not out there saying, "use this tool, and this is what you'll get". They're actually using the tools to do the work and then they're pulling people into them. (Senior Manager)

During the first wave of the pandemic, improvement specialists emerged as a highly valued knowledge resource in a moment of extreme need for innovation and improvement. One improvement specialist recalls how QI practices were vital in bringing people together to manage the crisis:

> [In the beginning] it was quite clear people were working in silos. So, there were lots of areas in a state of panic. And it was only when [improvement specialists] helped facilitate and pull them together, initiating the first sort of huddles, that then the daily management was working more smoothly. I think they just needed [us] because QI methods were not

> completely embedded throughout all the multidisciplinary teams prior to COVID pandemic. (Improvement Specialist)

The term 'learning by osmosis' was heard a number of times at interviews with reference to the amplified use of QI tools and techniques across the five hospitals: "*[People] were using them without knowing they were doing so… It seems they had absorbed them by osmosis*". This situated learning was partially enabled by the cultural changes that were facilitated by the improvement team prior to the pandemic and was further activated by the improvement team moving training to the frontline:

> What was really interesting was that from [my] team …, I was the only one who had done [QI training]. But so many members of my team began speaking the language and following the principles without realising they were doing it. So, I think that means the QI training was very important, because I think we are genuinely now breathing a bit of a culture where this is how we work. (Chief Pharmacist)

In sum, quality improvement specialists transitioned from a central (back-office) knowledge resource on the periphery of clinical work, to become highly valued peripatetic knowledge specialists working alongside clinical professionals at the frontline of service delivery.

Implications for Practice

Sustaining healthcare delivery under the extreme operating conditions and accompanying threat to personal safety posed by the COVID-19 pandemic was the unimaginable request made of hospital staff around the world. Our findings demonstrate how the presence of an established and systematic approach to quality improvement (QI) provided hospitals with a mechanism to sustain safe and high-quality care during a crisis. This finding is important as hospitals continually face crises. Our empirical data shows how a systematic approach to QI developed crisis management capabilities within the five hospitals, aiding rapid decision-making in response to a changed operating context while safeguarding sustainable healthcare.

Interviews with frontline clinical leaders and senior healthcare managers revealed countless instances of how QI supported and shaped their organization's response to the crisis (only a small fraction of our examples have been included in this chapter). We organized our findings under four headings that illustrate the role of quality improvement in sustaining healthcare during crisis: how QI enhanced top-down leadership during crisis; how crisis enhanced the engagement of senior leaders and doctors with QI; how crisis amplified the use of QI tools and practices; and how improvement specialists became a valued peripatetic knowledge resource during crisis.

Understanding leadership in extreme contexts is arguably one of the least researched areas of the leadership field (Hannah et al., 2009). The UK government mandate for hospitals to implement a top-down command hierarchy in response to the pandemic was an effective mechanism for the top-down unidirectional dissemination of rapidly changing guidance, but the novelty and uncertainty of the crisis required hospital leaders to access contextualized knowledge situated among frontline actors responding to the crisis in real-time (e.g., Ash & Smallman, 2008; Maitlis & Sonenshein, 2010; Sauer, 2003). Pre-existing leadership practices that foster multi-level leadership engagement, problem-solving by professionals on the frontline of service delivery and mechanisms to facilitate rapid and effective knowledge exchange were features of the systematic approach to QI that emerged as vital enablers of a highly contextualized leadership response (Gronn, 2002; Pearce & Conger, 2003).

An effective response to crisis is, more generally, bolstered by an understanding of conditions in the local environment. New practices and guidelines “require contextualizing, customizing and adapting” (Hardy & Maguire, 2016, p. 90). Hospitals by nature are complex operations that have multiple services and supply channels. This complexity is further exacerbated during crisis which amplifies the need for problem-solving (Azadegan et al., 2013). Again, we see how the pre-existing QI infrastructure incorporating a comprehensive and centralized QI training programme aimed at operational leaders supports rapid and contextualized problem-solving during crisis. For example, we showed how QI methods that foster ‘at-a-glance’ status updates such as production boards, can facilitate the rapid decision-making and communication of potential problems to employees. Visual management methods were also critical to rapid and effective communication between staff from disparate parts of the hospital who had never worked together before. Problem-solving capabilities were highly valued and extensively sought to support operational and daily management for rapid response during crisis. As such, we show that QI capability was a highly effective enabler of crisis management in a healthcare context. Further, we found that the crisis enhanced the legitimacy for QI, engaging senior leaders and doctors with QI in ways that hadn't been achieved prior to the pandemic.

The importance of the socio-technical implementation of QI emerged as a more nuanced finding of our research. Leadership engagement with QI was pivotal to facilitating real-time knowledge flows between the frontline and senior leadership in support of effective crisis management; we also highlight the importance of technical knowledge of QI methods in shaping an effective crisis response. While temporally paced strategic routines must be displaced to facilitate agility, QI methods that foster rapid process improvement became amplified as part of the essential toolkit for maintaining care delivery across all parts of the organization during crisis. Aligned to the importance of technical expertise, the important role of the improvement team as knowledge specialists was echoed throughout our findings. These knowledge specialists were instrumental in facilitating the required amplification of QI methods across the whole organization, from gold (strategic) command to senior doctors and nurses working on the wards—bridging the gap between leadership and frontline staff, applying QI methods to solve problems at pace and providing valuable and situated knowledge in a timely manner. We contend internal quality improvement teams were not just enablers of QI, but also enablers of crisis management. To conclude, we assert that a systematic quality improvement programme significantly enhances the potential of achieving sustainable healthcare even in the most extreme cases of crisis when sustainability is threatened.

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PART III

The Service User Perspective on Sustainable Healthcare

CHAPTER 12

From Evidence Use to Evidencing Work: Towards a Processual View of the Role of Evidence in Commissioning Policy-Making

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INTRODUCTION

Sustainability refers to the capacity of a health service to deliver healthcare over time, with consideration to future generations (RCP, 2011). Long-term sustainability requires expanding the healthcare definition of value to measure health outcomes against a number of environmental and social dimensions besides pure clinical or financial considerations (Mortimer

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et al., 2018). With ever-rising costs and demands upon existing service provision, the sustainability of healthcare in the Western World heavily depends on the capacity to commission, i.e., plan, procure and run services that provide the highest quality at the best value, avoiding duplication, inefficiency and waste (NHS Sustainable Development Unit, 2012). The expectation is that decision-making based on evidence "from authoritative sources" will play a central role in this effort (UK Health and Social Care Act, 2012).

The claim that evidence will help us to achieve the sustainability of high quality, affordable and equitable healthcare will sound familiar. The discourse of using research evidence to underpin health decision-making has become increasingly common outside of clinical practice; the setting where the idea was originally developed (Kirkwood, 2004). The expectation is that evidence will help guide efforts to 'organise, structure, deliver, and finance' healthcare services (Hewison, 2004). As Walshe and Rundall (2001, p. 451) note, managers who are responsible for these activities "…are on shaky ground if they argue that the principles of evidence-based healthcare do not apply to them". While evidence-based practice (EBP) and evidence-based management (EBMan) have thus found popularity in policy and management practices, questions of what evidence is and how it is used in practice remain. Moreover, translating the concept of 'evidence-based' from individual clinical work to other occupations and forms of decision-making has been fraught with controversy.

A central issue in this debate is the question of what counts as evidence, especially when evidence is defined as "a guide to truth…a sign or mark which justifies belief" (Kelly, 2008). Evidence-based medicine, for

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example, has an exact hierarchy of evidence which forms one of its cornerstones and privileges certain types of information over others. According to Sackett (1989) and several others (Burns et al., 1999), randomized control trials offer the strongest form of evidence, while observational or experience-based studies are at the bottom of the hierarchy. This has led to a continuing debate about the nature and relative weight of different types of evidence (Traynor, 2002). While traditionally, the emphasis in evidence-based medicine has been on scientific research, other work foregrounds the role of evidence from a variety of other sources, including clinical expertise, patient and carer experience, as well as local context and environment (Rycroft-Malone et al., 2004). Rather than scientific evidence, clinicians often rely on their colleagues' experience, interactions with each other and with opinion leaders, patients and pharmaceutical representatives and other sources of tacit knowledge (termed "mind lines") in their decision-making (Gabbay & Le May, 2004). In line with this more expansive view, the authors claim that there is "…little compelling support that scientific evidence is treated differently to other types of information" (Contandriopoulos et al., 2010, p. 445).

An analogous debate on the value, weight and ranking of forms of evidence has been taking place in other fields where the idea of evidence-based or evidence-informed decision-making has made inroads (see Ferlie et al., 2012 for review). These include healthcare commissioning, defined as the process by which health and care services are planned, purchased and monitored—a key aspect for the pursuit of healthcare sustainability. On the one hand, the expectation is that robust commissioning decision-making requires giving consideration to evidence related to equality and cost-saving (Averill et al., 2003). For example, Evans et al. (2013) argue that the failure by Welsh commissioners to use high-grade research evidence might lead to poor outcomes and poor resource use—and therefore, affect their long-term sustainability. On the other hand, a growing body of research shows that alongside scientific research, financial matters, strategic fit and public opinion, among others, are treated as evidence in healthcare commissioning decision-making (Clarke et al., 2013; Orton et al., 2011; Turner et al., 2017). For example, Whitehead et al. (2004) found that healthcare policy-makers rarely use the type of scientific information and evidence advocated by the EBP movement. Instead, they customarily use other sources of evidence which include case studies, timely small-scale qualitative studies, controlled evaluations of interventions and historical evidence (see also Turner et al., 2017).

Although views on the relative weight of different types of evidence differ radically between supporters and sceptics of EBMan and EBP, authors in both camps often share a common view on the entity-like nature of evidence. In short, they talk as if evidence were a sort of substance—a body of facts or information with immutable properties or attributes that can be stored and deployed at will. This, however, contrasts with the view that in clinical work, as well as healthcare management and commissioning, what counts as evidence is disputed and subject to debate, conflict and controversy. For example, Dopson et al. (2002) showed that even in the case of specific clinical topics supported by extensive scientific work, different bodies of evidence compete and engender different interpretations. Moreover, diverging interpretations of the same body of evidence can be observed between individuals within one group and between groups and professions (Dopson et al., 2002, p. 42). Similarly, Hendy and Barlow (2013) find that managers re-interpret evidence to align it with existing professional practices and needs—rather than the other way around. In this chapter, we claim that this is because evidence is not found, rather, it is assembled ("constituted") locally through an observable negotiated social process. Evidence is thus an outcome; it is always the result of the collective work entailed in its production and use, and work that we refer to as 'evidencing work' (see also Wood et al., 1998; Clarke et al., 2013; Swan et al., 2012; Wye et al., 2015).

Adopting such a processual view, however, is moot unless we unpack and make visible the evidencing work that goes into turning evidential information into evidence. Evidencing work is defined here as "the complex activities and transactions that contribute to the constitution and stabilization of evidence in the course of the policy decision-making process and decision making more in general" (see also Langley & Tsoukas, 2017, p. 6). Evidential information, in turn, is defined as knowledge produced through systematic means aimed to be valid across settings, which expands the cognitive capacity of actors and helps them to make verifiable and transparent judgements with regard to a specific problem (Thévenot, 2009). Accordingly, the questions that underpin this chapter are: how can a processual view enrich our understanding of the role of "evidence" processes in healthcare commissioning decision-making? What sort of evidencing work goes into making healthcare commissioning decisions in the UK healthcare system?

The assumption is that the shift in perspective might help us better understand the dynamic realities of how evidence enters the decision-making process of commissioners.

A Study of Commissioning Decision-Making

We conducted a study of commissioning decision-making in England's National Health Service (NHS). Between April 2013 and July 2022, clinical commissioning groups (CCGs) were responsible for getting the best possible health outcomes for their local population. To achieve their remit CCGs were involved in assessing local needs, deciding priorities and strategies, and then buying services on behalf of the population from health and care providers such as hospitals, clinics, community health bodies and so on. CCGs, therefore, made many healthcare management decisions in the NHS and played an essential role in pursuing high quality, affordable and equitable healthcare, as they make decisions about resource and funding allocations across health services (Mortimer et al., 2018). Further, CCGs present a favourable site to study evidencing as the UK Health and Social Care Act (2012) mandated CCGs to assure the quality of services through evidence use (Naylor et al., 2013; Russell et al., 2013).

We studied instances of service redesign in eight CCGs to capture variation while paying attention to the contextual elements. Of the selected CCGs, four were working on diabetes services (Seaport, Greenland, Rutterford, and Chelsea), and four were working on MSK services (Horsetown, Stopton, Coalfield and Shire). The names of the CCGs were changed to preserve anonymity. We focussed on the policy-making stage, that is, the process whereby decisions on redesign or disinvestment were made (problem identification & agenda formation, problem articulation, deliberation on the solution to pursue). The study of how the solutions were implemented went beyond the scope of the study.

Data collection took place through interviews, observations and document collection. We averaged five interviews per CCG (stakeholders $n = 35$). We also conducted follow-up interviews with the stakeholders to learn about the outcomes of the redesign work (total interviews $n = 77$). We observed meetings in two CCGs to gain familiarity with nuances of the groups' decision-making process as they unfolded in real-time (over 12 months of observation in each case).

This chapter also considers data collected on particular commissioning decisions regarding so-called individual funding requests (IFRs). IFRs are requests for support for exceptional cases that individual patients or their doctors make. IFRs are usually submitted when the NHS does not commission particular interventions; when the need for commissioning has not been identified; or, when a new drug or treatment that has been developed for a particular condition has not been accredited and qualified for its suitability in the NHS. Like in service redesign, an explicit expectation exists that decisions will be made based on evidence. For example, in the IFR policy guidance, the term "evidence" appears 41 times (NHS Specialized Commissioning Team, 2017). We observed 15 IFR panel meetings lasting between 2 and 3 ½ hours. We observed the discussions and decisions on 118 IFR cases, examined the related documentation reviewed documents, and the commissioning policies that informed the decisions during the meetings. We also conducted semi-structured interviews with the chairperson of the 3 panels and members of the three NHS organizations, who interfaced with the IFR process.

Findings

In our study, we found that evidencing work entails three types of activities: mobilizing knowledge and evidential information from different sources; combining them together by creating a local order of priority ("a local order of evidences"); and anchoring the resulting "jigsaw" (Whitehead et al., 2004) to external sources through visible association and rhetorical framing. We examine these in turn.

Multiple types of evidential information are used in Commissioning policy-making decisions. Like others before us, through our analysis, we found that multiple types of evidential resources are mobilized in the redesign process: universal, local, expertise-based and trans-local (see Table 12.1 for examples of different types of evidential information in commissioning).

These types of evidential resources can be distinguished along the abstract—local dimensions. At one extreme, we had universal evidential information produced by institutions, organizations and groups (e.g., NICE, NHS, Academia). Swan and colleagues (2012) term this "universal" evidential information because it is produced in an abstract way so that it can be applied across contexts. Participants described using universal evidential information in all but one CCG (Stopton CCG), especially during agenda formation and problem articulation episodes. In England, the work of commissioners is highly regulated and must

Table 12.1 Types of evidential information in commissioning

Type of evidential information	*Examples*
Expertise-based	Experiences and expertise of providers, colleagues, patients, families and carers
Local	Patient profile, activity, finance, contracting, outcomes and observations
Trans-local	Examples of practice from other sites, including new pathways
Universal	NHS reports, NICE guidance and guidelines, Right care and public health

follow (and must be seen to follow) research-based national frameworks and directives emanated by government and other arm's length bodies. NICE, for example, informed Seaport CCG's redesign by mandating that "a midwife, an obstetrician, a consultant, and a scanning machine…" be available for maternal diabetes. According to the evidence-based healthcare movement, universal evidence should be difficult to contest because it is produced by robust scientific methods. Yet, participants in our study illustrated that rather than being immutable, even this evidential information is subject to debate. Participants, for example, questioned the usability and relevance of universal evidential information within the context of their decision-making process. Many were unsure of how to apply universal evidential information or commented that universal evidential information is useless until it is translated in context, with Shire CCG participants arguing that "*…guidelines on knee pain…might be slightly different* [across contexts] *because services are different…*".[1]

At the opposite end of the continuum is local evidential information. This is information collected from participants' geographical area, usually related to patient numbers or profile, contracting or financial data. Local evidential information was considered useful because it is readily available at a relatively low cost (in terms of search time and effort, at least). It is also relevant to context because it is applied in the place of its creation. Local evidential information was especially important in view of developing actionable and successful decisions. As one of the informants put it

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[1] Quotes in italic are reported verbatim from our field notes and/or interviews. All names are fictional.

"*…there are some things, like workforce issues, which are open to interpretation… the evidence base is, you know, more difficult to translate into a specification for what would work locally*".

Participants also described treating the expertise of healthcare providers, colleagues, patients, families and other groups as evidential information. This personal, embodied and narrative-based information, which we term "expertise-based" evidential information, lay in-between the other two on the abstract-local continuum. Expertise-based evidential information was often carried by people that have an association and affinity with that context (e.g., a Consultant), making it persuasive. Participants at Coalfield CCG, for example, described making changes in practice before academic research had been published (universal evidential information). They said they knew certain evidential information was in the pipeline, and they felt those changes were appropriate (expertise-based evidential information).

Finally, Commissioners used a form of evidential information that we name "trans-local". This evidential information was created in one locale and re-used in another without the mediation of academic or other legitimation bodies. We refrain from calling it best practice evidence because it often was not validated as good or best. Indeed, trans-local evidential information was often applied before efficacy evaluations had been produced in the originating locale. Rather, the fact that changes were made with some measure of success in the other locale seemed to legitimize this evidence. A GP at Greenland CCG, for example, described choosing to mimic Seaport CCG's diabetes model as: "*It just struck me as a very good idea…the most innovative…all the indications were it seemed to work…*" This type of evidential information was persuasive because users could easily see how the evidence applies to them, their work and their area. While the appeal of "trans-local" evidential information rested on the persuasive capacity of narratives, its transfer to new sites is far from systematic. Occasional and occasioned stories, anecdotes and examples, shared through ad-hoc gatherings or accidental encounters (e.g., at conferences or national meetings), showed to be important in our cases. Greenland CCG chose to mimic Seaport CCG, for example, on the basis one GP had heard a talk from the consultant at the latter and "felt" it was the right solution. Similarly, Chelsea CCG chose to mimic Seaport CCG on the basis that their diabetes consultant had seen "first-hand that it works".

Working Different Types of Evidential Information Together

One of the observations from our study, which confirms previous work by Whitehead et al. (2004), Orton et al. (2001) and Wye et al. (2017), is that different types of evidential information were (selectively) mobilized and weaved together to form local orderings. Consider the following vignette:

> **Vignette 1:** *The panel discusses the case of a very young woman diagnosed with neutrophil disorder in childhood (lower-than-normal levels of a type of white blood cells). The origin of the problem was unclear, but at that stage, the underlying condition went into remission. However, the low level of white cells remained which required long-term therapy. Her local hospital is asking that her current experimental treatment continues to be funded.*
>
> *As in other cases, the panel starts by examining the substantial amount of paperwork attached to the special request. These include the justification provided by the hospital (no other therapies are available), the results of literature research (in which the results of the RCT are shown first), and the results of other clinical trials for similar conditions (as the syndrome is very rare).*
>
> *The Chair introduces the case mentioning that, although "the doctors are still uncertain of the original diagnosis", the hospital is still funding the treatment as this cannot be stopped without adverse effects: "we cannot stop the interferon gamma!" (Interferon gamma is a substance that plays a key role in the activation of cellular immunity.) James, one of the members, raises a concern: "There are no NICE guidelines available for the specific case." Several participants nod in approval. Another member speaks while holding one of the scientific papers included in the file: "The evidence is very sparse... although there is one randomized control trial that reports that the therapy is effective in adults."*
>
> *For a moment, everyone is reading, and there is silence in the room. Then Lisa (Finance Manager) comments in a calm voice: "We need to remember that it is expensive to be in the intensive care unit for two weeks!" (If the patient is denied the treatment, she might require long periods of intensive care). Claudia, the Public Health consultant, adds: "What are the chances of having another one?!"*
>
> *The case is approved due to the rarity of the condition. The written motivation explains that there is no other reasonably substitutable treatment, there is limited evidence of clinical effectiveness "as this is extremely rare", adding that "there is an RCT which shows that treatment to be effective". The motivation also suggests that "this is a cost-effective use of NHS resources." [Excerpt from field notes]*

In the vignette, we can observe different types of evidential information being mobilized and worked together: papers, scientific studies, expert knowledge, information about equity and financial viability are all used as part of the decision-making process. We observed this in most of our cases. Moreover, different types of information provided the background against which other pieces acquired meaning. In the vignette above, the difficulty is that universal principles need to be translated in the local context using local evidentiary information to acquire meaning (will the treatment that proved to be effective in the RCT work also in our case? What are the costs of *not* providing the treatment in terms of intensive care?). In this case, this local information is missing. In other instances, the opposite applied: a transformation manager at Greenfield CCG built her case for redesigning a service around the evidence that "*amputation rates are quite high compared nationally*". However, as she explained, this local evidential information was an arbitrary figure until it was interpreted alongside national comparative benchmarks. Local and national evidential information worked together: the former gave meaning to and took meaning from the latter.

There were also other good reasons why the different types of evidence needed to be worked together and aligned. Participants in the study commented that "good" commissioning solutions must comply with national guidelines. National guidelines and frameworks always needed to be "in the picture" and needed to be reconciled with the other forms of evidential evidence in order to produce a "good" and defensible decision. In the case above, the relatively weak universal evidence is combined with (and supplemented by) local considerations (the potential intensive care costs) and trans-local evidence (experience from one site). The different types of evidence work together to paint a persuasive picture.

The use of multiple evidential information is shown in Table 12.2, which highlights that across the CCGs, the different types of evidential information mobilized during the commissioning decision-making process. The table shows the different forms of evidentiary information that are mobilized in the early stage of the decision-making process (termed 'agenda formation') and in the later stage (termed deliberation). The need for Commissioners to be seen to act on the basis of robust evidence, and according to the existing guidelines, explains, in part, the pervasive presence of universal evidence (U). Universal evidence is (almost) always in the picture—although, as we have seen in the vignette,

Table 12.2 Combination of multiple types of evidential information used in different cases

	Seaport	*Greenland*	*Rutterford*	*Chelsea*	*Coalfield*	*Shire*	*Horsetown*	*Stopton*
Agenda formation (early stage)	L,U,E	L,U	L,U	L,U,E,T	L,U	L,U	L,U	L
Deliberation (late stage)		L,U,E,T	L,U,E	U,E,T	L,U,E	L,U	L,U,E	L,U,E

Local (L), Universal (U), Expertise-Based (E), and Trans-Local (T) evidential information

its weight in the decision varies significantly and is interpreted in relation to local evidentiary information.

Creating a Local Order of Evidence(s)

In vignette 1, different types of evidential information compete among themselves in order "to guide to the truth". Different pieces of evidential information are compared, contrasted and a provisional local ordering of evidential sources is created during the decision-making process. At one point, universal evidence seems to take the upper hand, suggesting that the case might not be viable for funding. However, as the consensus is provisionally formed, one participant, Lisa, upsets the provisional ordering of evidence by questioning whether the decision should be based only on studies of clinical effectiveness. Universal evidence might be weak, but local considerations (the cost of not approving the request and the rarity of the condition) and trans-local information (in one case, at least the treatment worked) now join forces to shift the balance. In the end, the ordering of evidential resources is reversed: universal evidence, which seemed to have the upper hand at the beginning, is trumped by locally-driven considerations. The decision is to fund.

In sum, the decision on whether to fund a request or not results from the negotiation of a local order of competing evidential sources. What counts as strong or weak evidence, what evidence source gets the upper hand, and what does not count as evidence at all is only determined when a final decision is made and as a result of the collective evidencing work.

The vignette shows, further, that, before a local order of evidential sources is established, provisional orderings are created in conversation and put under trial through a number of argumentative moves; the two most common (in our observations) being around justifiability and consequences. First, participants constantly, albeit tacitly, monitor whether they will be able to make themselves accountable for their deliberation. In the vignette above, we can see this through James' statement, "There are no NICE guidelines available for the specific case". Second, the process in conducted while keeping in mind the implications and consequences of any decisions made. Claudia is thinking ahead: if the panel chooses to fund this request, thus setting a precedent, the chance of having to fund the same treatment in other instances is very slim. In other cases, when the decision is not justifiable, or the consequences are deemed undesirable or inappropriate, the emerging arrangement of evidence is discarded and the discussion continues. The process continues through the necessary cycles until a local order of evidence is obtained through agreement or, very rarely, through an authoritative intervention (the Chair may have the final say). If no agreement is obtained, the deliberation fails, and the process has to be restarted.

Like others before us, we found that the outcome of the negotiation—and therefore, what counted as evidence in the final deliberation was often influenced by the local alliance of different sources of influence: for example, highly regarded people (Burgers et al., 2012; McGivern et al., 2009) and experience accumulated by highly reputable organizations (Turner et al., 2017) carried more persuasive authority and therefore had more weight in the negotiation. As one of our informants put it:

> Where there is national evidence or stuff that's been well researched it's much easier to say to clinicians 'you're being overly protective now and actually that's the national evidence, that's what national best practice is, that is what you need to do'.

In other cases, some of the decisions were made utilizing the authority derived from the formal role in the organization ("the CEO interrupts: *I think we had enough conversation…benefits are…good for the organization…capital available… I think this a yes?*" No one in the room answers. The project is approved). Given that, as depicted here, the ordering of evidential sources is inherently "political", this is hardly surprising.

Table 12.3 summarizes the three observed ways to establish a local hierarchy of evidential information.

Table 12.3 Ways of establishing local hierarchy of evidential information

Ways of creating a hierarchy of evidence	*Examples*
Sound argument	The first case is about a person wanting to go through a procedure to address some spinal problems. J reasons that the patient went down a completely private route: she is suspicious that the procedure is carried out only by one provider: is he a maverick or a charlatan? F and N join in supporting her view. They comment in agreement that if the procedure had been so successful "by now it would have been picked up by others". N and J reinforce the argument by also reiterating that it was suspicious that "after several years this doctor is the only person carrying out the procedure" F also comments that "no health service assessment had been carried out" and that this made the whole thing suspicious. She adds that "a comment or referral from an esteemed colleague would have made a great difference"
Consensus	If you listen to everybody, actually it doesn't take a lot of pull together a service that actually does what everyone wanted to do… designing a pathway is not that difficult…
Authority or position of influence	CEO interrupts, "I think we had enough conversation… the benefits are good for the organization …the capital is available… I think this a yes?" [No one in the room answers]

Making the Local Order of Evidence as Robust as Possible

While the observations above refer to the social processes through which a local and provisional hierarchy of evidence was obtained so that a decision can be made, in the study, we observed that different types of evidentiary information also differed in terms of the affordances they offered in the process of arriving at deliberation and deciding "which evidentiary information should we listen to in our decision making?" Affordances are defined as action possibilities that are readily perceivable by an actor (Norman, 1988). Different types of evidentiary information offered different ways to compose a robust jigsaw that could withstand scrutiny.

For example, the strength of universal evidence—the fact that it is derived through abstraction and generalization imply necessarily its de-territorialization. Accordingly, universal evidence cannot be directly applied to local contexts. What makes evidential information robust also tends to affect its local relevance. As a result, abstract and universal evidential information (universal in the sense of being abstract enough to be applicable to a large number of situations) are both difficult to contest but easy to ignore or disregard or to be taken for granted. The converse applies to experience-based evidence, which, as we have seen above, is usually considered the Cinderella by the custodians of universal evidence. Experience-based evidential information is very often personal, preverbal and embodied. It is, by definition, value-laden and interest-led. However, it is usually carried by people we care and trust, i.e., people with whom we have an association and affinity and that we find persuasive. Finally, experience-based evidential information is easy to situate in a specific set of conditions that we share with the carrier and that allow us to establish direct and affectively charged associations. As a result, experience-based evidential information is easy to confute and invalidate but also hard to ignore.

Local and trans-local evidential information sit between these extremes on the basis of the relative length of their chains of association. Local evidential information involves data collected from evaluation activities and forms what Stetler et al. (1998) call 'affirmative experience', that is, experiential observations or information that has been reflected upon, externalized, and exposed to explorations of truth and verification. Local evidential information is relatively easy to invalidate (although less so than experiential evidence) as it is based on very few associations and is usually supported by a rather weak apparatus of validation. It is thus open to charges of bias, incompleteness and politicking, although its persuasiveness is less dependent on the nature of the carrier (as in healthcare, it is usually produced by a technocratic apparatus that injects an element of formal rationality in the process). At the same time, it is also hard to ignore as it is directly relevant.

Finally, trans-local evidential information usually travels in narrative format via stories, anecdotes and examples, as we saw in the case of Seaport CCG results being used in Greenfield CCG prior to the availability of universal information. Oral or written accounts of good practices, case studies with clear problems and successful solutions are good examples of trans-local evidence. The appeal of this type of evidential information stems from a combination of the well-known persuasive capacity of narratives and their sense giving capability, and the fact that the chain of association is usually shorter than in the case if universal evidential information—so that personal associations to the original context are still possible. However, one characteristic of trans-local evidential

Table 12.4 Strengths and weaknesses of evidential information in the evidencing process

	Strengths	*Weaknesses*
Experience-based	Easy to contest as inherently value-laden, biased and subjective	Difficult to ignore as highly relevant and easily usable in practice
Local	Easy to contest: if based on universal model N too small; procedure inadequate; biased If based on experiential sources, see above	Difficult to ignore as highly relevant and immediately useful
Trans-local	Contentious because based on narrative ('give me numbers') Relatively easy to ignore because not applicable or not invented here or because claimed as 'best practice' even though lacking interrogation	Persuasive because based on the power of narratives and built on experience (good practice); retains traces of situation where it emerged and is therefore easier to relate to
Universal	Easy to ignore and disregard as too abstract, difficult to relate to the actual problem or taken for granted	Very difficult to confute as legitimated by large scientific/ calculative apparatuses

information is that it becomes increasingly 'abstract' with successive translations away from its original source. As such, it increasingly requires to be re-contextualized which makes creating personal associations with the original event increasingly difficult. This, in turn, makes it easier to ignore and disregard as non-applicable here. Table 12.4 summarizes the contestability and persuasiveness of the different types of evidence, and Fig. 12.1 provides a visual representation of the four-fold typology of evidence and its strengths and weaknesses in the evidencing process.

Justifying the Local Ordering of Evidence Rhetorically

Work on the use of evidence in decision-making often distinguishes between conceptual, instrumental and symbolic utilization of evidence (Beyer & Trice, 1982; Rich, 1991). Conceptual utilization refers to situations in which evidential information is used to introduce new interpretations about the issues and the facts surrounding the evidential contexts without inducing changes in decisions. Instrumental utilization is when there is a clear correspondence between an identifiable piece

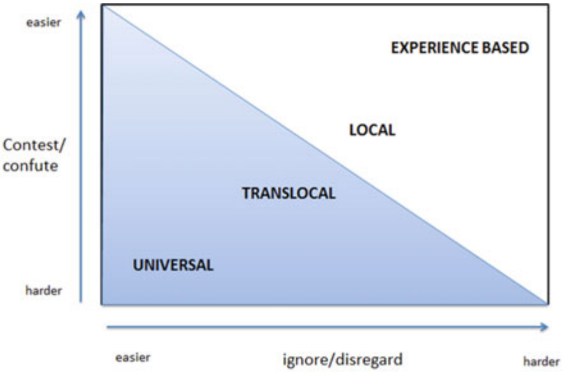

Fig. 12.1 Contestability and persuasiveness of evidential information types

(or pieces) of evidence and the outcome of a decision. Symbolic utilization involves the use of research as a persuasive or political tool to legitimate a position or practice. Our processual view suggests that this traditional distinction captures only partially what happens in the field. As we reported in Table 12.2, several types of evidential resources were used in the same project and for different uses. As we have seen in vignette 1, some of these types of sources at times conflicted with each other. While different types of information were considered during the evidencing process, they could not all count as "evidence".

The issue becomes clear if we pause to observe that different types of evidential information can be used for different purposes at different stages of the commissioning process. Take, for example, universal evidential information. Participants told us that universal information plays a central role at the beginning and at the end of the process. At the beginning of the process, universal evidential information (scientific articles, policy reports) is often used conceptually to frame and make sense of the issue at stake. This is reflected in the practice of "tabling a paper", introducing the discussion using a piece of writing that tries to frame the issue so that it can be handled during the discussion. As we have seen in Table 12.2, universal evidential information also appears in the final decision. We found that this was the case even when the deliberation was based on an ordering of evidential information in which universal evidential information played a secondary role. Consider vignette 2 below and its follow up:

> **Vignette 2:** *The case under discussion is a breast reduction request. John notes that the proportion between the breast and the rest of the body of the patient is quite big ("she must have really big boobs") and suggests that maybe a "yes" should be in order as he knows that the procedure is really life-changing. Nora comments that when she looked at this case the night before, she was in a bad mood and opted instead for a "no." Fran joins in and says, "I must have been in the same mood…I came up with a "no" as well (all laugh again)." She argues that the patient is still young (the patient "is only 30"), she has only one child, and she suspects that the reasons are, in fact, of a cosmetic nature. They agree that in the long term she may benefit from the procedure but that at the moment, the request seems motivated only by how she looks. Fran adds: "My gut feeling is "no"…there is a long list of people who are in the same situation…I am sure she would benefit and this would make her happy but so would be with many others". The decision is to deny the treatment.*

Rather than relying on abstract universal evidential information, participants construct a local order of evidences in which personal "gut feeling" and experience are combined with trans-local evidential information ("*in the long term she may benefit*") to produce a consensual decision. But this is not the end of the story. Compare the vignette above with the (short) report from the session:

> *Breast Reduction – Funding is DECLINED Jan/10 for reasons: treatment appears cosmetic, no indication of BMI provided, the patient does not meet criteria; there is no evidence of exceptional clinical circumstances.*

In the report, all traces of the discussion and evidential information that led to the judgement have been carefully erased. The report makes explicit its "objective grounding" by explicitly anchoring the decision to universal evidence ("no indication of BMI provided"). The use of a passive tense helps to emphasize the objectivity of the decision. No reference is made to "gut feelings", which may have been considered "inappropriate" as a basis for this type of decision. The evidential information used in the decision and the one mobilized in the account is different. The report (and reporter) strengthens the justification by rhetorically anchoring the decision to existing discourses of rationality, fairness and objectivity (universal evidence). This reporting practice, not dissimilar to that of judges writing sentences after a trial, is part and parcel of the practice of evidencing work. It offers reassurance that, as the decision travels across time and space (i.e., reaches the requestor and/or his/her physician, the review panel, the press or even the court), criticism can be prevented in case of an appeal. The decision appears to be based on the instrumental use of universal evidence but is, in fact, the result of evidencing work that required working different types of evidential information together, ordering them, arriving at a conclusion, and then rhetorically framing the conclusions to make it as robust as possible. We saw the same process also repeated in the case of "bigger" and longer decisions, for example, the design and establishment of a new service and the disinvestment of others. While the need to rhetorically justify the decision by anchoring it to one form of evidence is a necessary aspect of the process of evidencing, the type of evidential information used to justify that the decision is valid may vary. Justifying decisions using only universal evidence might be inappropriate, for example, when speaking to politicians or patients (who would be more sensitive to trans-local and experimental justifications).

Conclusion: From Evidence to Evidencing

We started our chapter by asking how a process-based view of evidence might help us better understand the challenges of healthcare decision-making, in our case, within commissioning. The subtext is that by furthering the understanding of this process; we might help practitioners arrive at better decisions on how to procure services and pursue sustainability by using a variety of sources of evidence and value (Mortimer et al., 2018). Using the findings from a study of NHS Clinical Commissioning Groups (CCGs), we found much is to be gained if (a) we distinguish between evidential information and evidence; and (b) we conceive the latter as the outcome of specific evidencing work.

Evidence can thus be understood as information that takes on evidential value as a consequence of specific and empirically observable evidencing work at the end or during a decision-making process. The evidential value of information stems from the work of using that information during the decision-making process and does not pre-exist it. A clinical guideline that is intentionally ignored or overruled in a decision cannot truly be considered as having an evidential value in this specific context. What counts of evidence in any decision or deliberation co-emerges with partial final deliberation (a decision can require several deliberations). What is not selected is quickly forgotten as irrelevant information. Critically, until the decision remains open, what counts as evidence is still undetermined. One of the recurrent arguments in this paper is that conflating evidential information and evidence leads to unsolvable conundrums or should be conceived itself as a type of evidencing strategy. Vignette 1 is a good case in point. Had the panel used a strict and ideological view of what counts as evidence, the request should have been rejected, as the effectiveness of the therapy is still unproven. Attempts to give ideological priority to one form of evidential information over another are, thus, attempts to steer the decision in one direction or another. This applies to clinical but also economical as well as other types of evidential information. For this reason, EBMan and EBP have been denounced as ideological or political projects (Learmonth, 2008; Learmonth et al., 2006). Their main goal is to give prominence and pre-eminence to a certain type of clinical evidentiary information and promote the role of those who possess it, that is, research-oriented clinicians.

Evidencing work in commissioning entails (1) working different types of evidential information together (2) collectively constituting a local order of evidences; and (3) rhetorically framing the decisions in ways that are deemed acceptable against the existing institutional landscape. These types of work do not form a neat sequence: the process can be almost instantaneous or can last for an extended period; evidencing efforts can be interrupted because the negotiation fails; the process can have false starts or restart several times. However, all three types of evidencing work need to be present in some form.

The goal of working together different types of evidential information is to obtain what Whitehead et al. (2004, p. 819) call a 'jigsaw' of evidence, that they describe as synthesis of evidence from diverse sources 'to make the causal links that inform policy'. From our view, however, the effort is not that of synthesizing evidence from diverse sources. Rather, the goal is ordering pieces of evidential information, so that together (a) they form a nexus that can expand the cognitive capacity of actors and help them to make judgements in one direction or another; and (b) they help to solve the conundrums resulting from the contradictions between types of evidential information. The latter is necessary because commissioning decisions require all those involved to attribute differential value to the different pieces and types of information available. Participants in the deliberation have to implicitly or explicitly agree on what source or piece of information to listen to—what to believe in. In situations that are submitted to "the *imperative of justification*" (Boltanski & Thévenot, 2000, p. 209), what counts as evidence is thus always partly grounded in local negotiation. The negotiation is often not about the "evidence" itself but its order of priority. The deliberation can be resolved quickly or take the form of a debate or a controversy in which alternatives are counter-posed and played against each other. Of course, the establishment of a local order of priority among evidential informational sources does not happen in a vacuum. Personal preferences, structural factors (e.g., the nature of the source, how the information is communicated), power relationships, discourse in places (i.e., the established ways in which the referent community attributes value), the emotional environment and the previous history of decisions (groups may develop a local culture of evidence) all may affect or in some case determine the outcome. It is for this reason that we have referred to this process as political in nature. The prioritization of specific forms of evidence—as, for example, in the case of the Evidence-Based Medicine movement, need thus to be re-specified as an effort to condition the local creation of orders of evidence through organizational and associational mechanisms and accompanying discursive formations. The same can be said of the patient voice movement and the effort to promote the value of patient narratives as a form of evidential information. Their (often laudable) effort is to give strength and visibility to certain forms of evidential information so that this is taken into account and given the necessary attention during the decision-making process.

Implications for Practice

Our chapter suggests, first, that any attempt to construct hierarchies of evidence and prioritize one type over another (Black, 2001; Contandriopoulos et al., 2010), in commissioning and elsewhere, is either destined to fail or a political project that does not dare to speak its name. Giving prejudicially an advantage to any form of knowledge while disregarding the local condition in which the decision takes place is likely to lead to unintended and possibly negative consequences.

Second, to understand the "use of evidence" in commissioning decision-making, we should ask when evidence is used and for what purpose, where does evidential information come from, and who/what carries evidential information into decision arenas and how and what practical consequences this entails? These questions take us beyond debates around, simply, what evidence is (and which type is better). We argue that pursuing this work-based line of inquiry is likely to be much more rewarding than trying to establish which type of evidential information is more useful, as the answer is always going to be “it depends”.

Third, and strictly related, a focus on evidencing work brings to centre stage the capabilities underpinning evidencing work and the ecology of human and other-than-human sources of agency that help to establish the local order of evidences. Focussing on the former suggests that critical to producing good commissioning decisions—including decisions that can foster sustainability, are the social, relational and managerial capabilities of those involved in the evidencing work. Swan et al. (2017), for example, identify five critical capabilities that underpin effective evidencing work in commissioning: sourcing and evaluating evidence, engaging experts and stakeholders, effective framing, managing roles and expectations and managing expert collaboration.

Focussing on the latter foregrounds the importance of attending to the differentiated and distributed nature of the process of evidencing and its effects on the outcome of the decision (Nicolini et al., 2015). To understand evidencing work, for example, we need to consider the ways in which evidential information is mobilized through texts, forms, digital systems and organizational routines—for example, when administrators prepare “the papers” for a meeting. Because all these sources include certain information and exclude others, they effectively prefigure what comes to count as evidence.

Similarly, the agency behind the mobilization of different types of information can be of a social rather than individual nature. The information can thus be mobilized, brokered, offered and at times imposed by a variety of agents, from individual brokers to professional associations and other sources of authority. Skilfully managing who is bringing information to the party (for mapping evidential stakeholders and their influence and importance), learning to assemble the right constituency and decision-making body and ensuring that all the relevant voices are heard in the evidencing process is another critical aspect of arriving at a good commissioning decision from a processual view.

Finally, the perspective introduced here suggests that decisions are made within an existing evidential landscape that may be opaque to the decision-makers, and that needs to become visible so it can be appropriately managed. Understanding when and how evidential information is brought to bear in the process of evidencing might help to prevent well-known issues such as ‘least effort bias’ (i.e., the tendency to mobilize the information that is most accessible: Wilson, 1999); homophily (the tendency to choose sources based on similarity and familiarity); and self-interest (Pornpitakpan, 2004).

To conclude, in this chapter, we suggest that much is to be gained if we shift from a view of evidence as an entity, to evidencing as the process of giving evidential value to information that is used in the context of decision-making. Our work reveals evidencing work; that is, the series of activities that enable different types of evidential information to be used as evidence within a decision-making process. This reinforces arguments that evidence does not speak for itself (Swan et al., 2012) but has to be understood, worked out and actioned in context. Our study suggests that, while robust knowledge and evidential information can (and should) inform the decision-making process, evidence, and therefore scientific research, can never "lead" policy-making. This will be critical in the debate on how we shape and sustain high quality, affordable and equitable healthcare, where the need to measure outcomes for patients and population is likely to generate heated controversies. We should recognize the limits of extending models like Evidence-Based Medicine, developed in medical/scientific settings, to healthcare policy and management decisions. In commissioning management, scientific research is, of course, crucial, but evidencing work entails practical, moral and political judgements, not just scientific ones—i.e., judgements of value, not just judgements of fact.

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CHAPTER 13

Advances in Behavioural Science to Support Patient and Carer Self-Management

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Introduction

Behavioural science is a field that draws upon the insights and methods from areas such as psychology, economics, sociology, and neuroscience. Fundamentally, behavioural science is the study of human behaviour—how and why people behave the way they do in the real world. Based on empirical observations of human behaviour, evidence has shown that people do not make what neoclassical economists consider the ‘rational’ or ‘optimal’ decisions, even if they have the information and the tools

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available to do so. While traditional economic models have treated people as purely rational actors who have self-control and are always motivated to achieve their long-term goals, the field of behavioural science considers people as human beings who are subject to emotions and impulsivity and are influenced by their environments and circumstances.

Over the past few decades, the works of pioneers in the field such as Herbert Simon, Daniel Kahneman, and Richard Thaler, who were awarded the Nobel Prize in Economic Sciences in 1978, 2002, and 2017, respectively, have paved the way to the rise in prominence of the field and increasing interest in behavioural insights—the application of theory and evidence from behavioural science to public policy issues. For instance, we are now aware that people are prone to using heuristics (or 'mental shortcuts') and biases in making judgments (Tversky & Kahneman, 1974), and often make decisions intuitively, effortlessly, and with little conscious awareness (Kahneman, 2003). An understanding of these heuristics and biases can help us design environments that circumvent these biases and achieve positive health outcomes (see Appendix 1 of this chapter for a selected list of key heuristics and biases related to health decisions).

Our new understanding of human decision making provides us with opportunities to influence choices that take better account of how people actually respond to the context within which they make their decisions—the 'choice architecture'. This approach is popularised in the book *Nudge: Improving Decisions About Health, Wealth, and Happiness* and the updated *Nudge: The Final Edition* (Thaler & Sunstein, 2008, 2021), which has sparked a revolution in policymaking. At the request of the Cabinet Office (a department of the UK Government responsible for supporting the Prime Minister and the Cabinet), a group of behavioural scientists developed a practical framework for designing nudge interventions—the MINDSPACE framework (Dolan et al., 2010; see Appendix 2 for the description). MINDSPACE is an acronym that describes nine robust effects on behaviour: Messenger, Incentives, Norms, Defaults, Salience, Priming, Affect, Commitment, and Ego. They operate largely on human automatic processes, in contrast to the reflective processes targeted by more traditional behaviour change techniques (Vlaev et al., 2016). Given the limitations of traditional approaches of behavioural change, the application of behavioural insights is attractive to policymakers, in part due to the perceived potential to offer cost-effective, non-paternalistic solutions to societal challenges (Loewenstein et al., 2012). As a result, many behavioural insights teams and nudge units have been established around the world. Today, there are at least 600 behavioural science teams working across the globe (Wendel, 2020), with many of the teams working on behavioural health challenges, such as the prevention and management of noncommunicable diseases (NCDs).

Behavioural Insights and Sustainable Healthcare

With increasing healthcare spending, it is vital to make healthcare systems more sustainable by reducing inefficiency and waste—whether in terms of supplies, equipment, space, capital, ideas, time, or opportunities. Behaviour lies at the heart of this issue; Healthcare consumers' behaviours are major determinants of their health, while healthcare providers' behaviours are major determinants of whether the best and most appropriate care is delivered to healthcare consumers.

Yet, we know that human behaviours and decisions are often suboptimal and place healthcare systems under immense cost pressure. For example, the NHS spends approximately £1.2 billion a year on missed GP and outpatient hospital appointments; £6.1 billion a year on overweight and obesity-related health issues in 2014–2015, a figure predicted to increase to £9.7 billion by 2050; and an estimated £3.5 billion a year on alcohol-related health issues, with alcohol-related hospital admissions having grown almost 20 per cent over the last decade. Since behavioural insights and nudge-type interventions have the potential to steer people in certain directions while maintaining their freedom of choice, they offer a potentially effective way to change health behaviours and improve outcomes at lower cost than traditional policy tools and have a potentially important role in improving the sustainability of healthcare systems.

Nudges have been widely applied to healthcare settings in the UK and globally and have been shown to reduce inefficiency and waste in healthcare systems in areas such as:

- ***Adherence:*** improving rates of medication adherence, particularly for chronic conditions.
- ***Attendance and take-up:*** reducing non-attendance at health appointments and limited take-up of healthcare programmes such as screening.
- ***Shared decision making:*** improving effective shared decision making facilitated by better patient decision aids.
- ***Overtreatment:*** reducing overtreatment.

- ***Discharge and handover:*** improving discharge and handover processes.
- ***Hospital-acquired infections:*** reducing hospital-acquired infections.
- ***Evidence implementation:*** improving evidence implementation.

The first three areas—adherence, attendance and take-up, and shared decision making are primarily concerned with changing healthcare consumers' behaviour. The other four areas—overtreatment, discharge and handover, hospital-acquired infection, and evidence implementation are concerned with changing healthcare providers' behaviour. We will discuss the opportunities and considerations for each of these areas in greater detail later in the chapter, as well as the related implications for healthcare management.

Key Noncommunicable Diseases

Noncommunicable diseases (NCDs) are responsible for almost 70% of all deaths worldwide, with the majority occurring in low- and middle-income countries (World Health Organization, 2021a) NCDs are the biggest cause of mortality and morbidity, and hence the most important global health issue in this century (Lozano et al., 2012; Murray et al., 2012). The United Nations and the World Health Organization have made political declarations about the impact of NCDs on human development and urged countries to make voluntary commitments to the goal of reducing global mortality of NCDs. As NCDs are mostly driven by four behavioural risk factors—unhealthy diet, physical inactivity, tobacco use, and the harmful use of alcohol—the application of behavioural insights to promote health behaviours is important in the prevention and management of NCDs (Chokshi & Farley, 2014; Ezzati & Riboli, 2012). In this chapter, we focus on three key NCDs: diabetes, cardiovascular diseases (CVDs), and cancer.

Diabetes

Diabetes is a chronic, metabolic disease characterised by elevated levels of blood glucose, which leads to severe damage to the heart, blood vessels, eyes, kidneys, and nerves over time. The most common is Type 2 diabetes, which occurs when the body becomes resistant to insulin or does not produce sufficient insulin. The number of people with diabetes around the world has quadrupled from 108 to 463 million in the last 40 years (International Diabetes Federation, 2019; World Health Organization, 2021b), with the 90% having Type 2 diabetes. Diabetes is a major cause of many other health complications, such as blindness, kidney failure, heart attacks, stroke, and lower limb amputation. The major risk factors for diabetes are physical inactivity, unhealthy diet, and tobacco use, and diabetes screening is important for early detection. Once diagnosed, the treatment typically involves lifestyle changes for improving diet and physical activity, as well as tobacco use cessation to avoid complications. Yet, many people with diabetes often fail to make the recommended lifestyle changes and adhere to the treatment, leading them to experience costly comorbidities. The application of behavioural insights can play an important role in the prevention of diabetes through encouraging healthy lifestyle behaviours, promoting early detection by increasing uptake of screening tests, and improving treatment adherence for people living with diabetes.

Cardiovascular Diseases

Cardiovascular diseases (CVDs) are a group of disorders of the heart and blood vessels and include coronary heart disease, cerebrovascular disease, rheumatic heart disease, and other conditions. CVDs are the leading cause of death globally, with an estimated 17.9 million people dying from CVDs in 2019, which is 32% of all deaths (World Health Organization, 2021c). Even though CVDs can be prevented by addressing behavioural risk factors such as unhealthy diet, physical inactivity, tobacco use, and the harmful use of alcohol, many people do not adopt such healthy lifestyle behaviours. Once a person is identified as at risk of CVDs or diagnosed with CVDs, behavioural interventions including improving diet and physical activity, tobacco use cessation, and avoiding the harmful use of alcohol are often recommended, along with medication. Behavioural insights may be applied to encourage healthy lifestyle behaviours to prevent the onset of CVDs, as well as help patients living with CVDs manage their conditions to avoid costly comorbidities.

Cancer

Cancer is a large group of diseases that can start in almost any organ or tissue of the body when abnormal cells grow uncontrollably, go beyond their usual boundaries to invade adjoining parts of the body and spread to other organs. It is the second leading cause of death globally, with an estimated 9.6 million deaths, or one in six deaths, in 2018 (World Health Organization, 2021d). The most common types of cancer in men are lung, prostate, colorectal, and liver cancer, while the most common types in women are breast, colorectal, lung, cervical, and thyroid cancer. At least 30–50% of cancer deaths are preventable, and prevention offers the most cost-effective long-term strategy for the control of cancer. The single greatest avoidable risk factor for cancer mortality is tobacco use, while unhealthy diet, physical inactivity, and the harmful use of alcohol are also risk factors for many types of cancer. Early diagnosis of cancer is crucial, as cancer care may be provided at the earliest possible stage and may improve cancer outcomes—therefore screening is very important in the timely diagnosis of cancer. The application of behavioural insights on promoting healthy lifestyle behaviours, such as avoiding tobacco use, as well as encouraging uptake of cancer screenings, is important in influencing cancer control and outcomes.

The Behaviour Change Pathway

We use a behaviour change pathway approach and discuss the three stages of disease prevention for each of the NCDs—lifestyle and prevention (primary prevention), detection and monitoring (secondary prevention), and treatment and adherence (tertiary prevention) (World Health Organization, 2021e). The first stage focuses on lifestyle and prevention through encouraging people to adopt healthier lifestyle behaviours, for example, choosing healthier food in restaurants, cafeterias, and supermarkets, as well as engaging in physical activity. The second stage focuses on applying behavioural science to promote early detection of NCDs through increasing the uptake of screening and monitoring. Once an individual has been diagnosed, the third stage of the behaviour change pathway focuses on the application of behavioural insights to encourage individuals to adhere to treatment and recommendations provided by physicians (Fig. 13.1).

Primary Prevention: Lifestyle and Prevention

In the first stage of the behaviour change pathway, it is important to encourage people to adopt healthy lifestyle behaviours, such as healthy

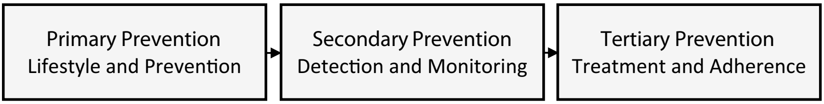


Fig. 13.1 The behavioural change pathway

diet, physical activity, avoiding tobacco use, and avoiding the harmful use of alcohol, so as to prevent or delay the onset of NCDs.

Focus on Diabetes

The rising prevalence of overweight and obesity has led to an increase in the incidence of Type 2 diabetes and being overweight or obese is the main modifiable risk factor for Type 2 diabetes (Gatineau et al., 2014). The Diabetes Prevention Program is a large-scale long-term study aimed to change participants' daily habits through a comprehensive diet and lifestyle intervention (Diabetes Prevention Program Research Group et al., 2009). The following case study demonstrates how the application of behavioural insights in the design of financial incentives effectively reduced weight and diabetes risk through the Diabetes Prevention Program (Faghri & Li, 2014).

Case Study 1: Primary Prevention: Lifestyle and Prevention Focus on Diabetes

Effectiveness of Financial Incentive in a Worksite Diabetes Prevention Programme

Executive Summary

In order to increase adherence to a 16-week weight-loss programme (Diabetes Prevention Program), employees in select worksites were offered a choice between two types of financial incentives: a 'standard incentive' scheme, and a 'standard incentives + deposit' scheme. Employees who were offered the incentives were, on average, more likely to lose weight, reduce their BMI, and reduce their diabetes risk score (DRS) relative to participants in the non-incentive worksites. Additional measures at the end of a 12-week follow-up period revealed that participants in the 'standard incentive' scheme were three times more likely to achieve their target weight-loss relative to participants who did not receive any incentives.

Likewise, those who opted for the ‘standard incentives + deposit’ scheme were two times more likely to achieve their weight-loss goal compared to the non-incentivised participants.

Problem

There is considerable evidence demonstrating the effectiveness and cost-effectiveness of lifestyle changes (weight loss, improved diet, and increased physical activity) in the prevention of NCDs such as diabetes. As such, many employers offer employees at risk of developing Type 2 diabetes the opportunity to enrol in wellness programmes designed to improve their health. However, the adherence of employees to these programmes remains a major challenge.

Solution

A sample of 99 overweight or obese employees (BMI = mean 34.8 ± 7.4 kg/m^2) who are at risk of developing Type 2 diabetes, participated in a 16-week weight-loss programme, designed to test the impact of behaviourally designed financial incentives on their adherence to the programme. Employees at four worksites (two control worksites; two treatment worksites) voluntarily enrolled into the programme. Those assigned to the incentive group were offered a choice between two options:

- a ‘standard incentive’ scheme, in which employees received a cash award if they attained their target weight loss; and
- a ‘standard incentive + deposit’ scheme; in which overweight employees deposited \$1–\$5 per pound and obese employees deposited the same amount per pound and a half that they were planning to lose during the programme.

This amount was then matched by the company and returned to the participants if the weight-loss goal was attained. If not, the money was donated to the worksite health promotion programme. All participants received a one-hour consultation to learn about healthy weight loss and to set their weekly weight-loss goals. Participants were encouraged to keep track of their daily calorie intake and physical activity records. All of the participants signed a contract committing to the programme.

Impact

Absolute weight, BMI, waist-to-hip ratio, DRS, and systolic and diastolic blood pressure were measured. On average, participants in the incentive group were more likely to lose weight (MD = 5.05lbs, $p = 0.027$), reduce their BMI (MD = 1.73, $p = 0.04$), and their DRS (MD =

1.26, $p = 0.011$) compared to participants in the control group by week 16. Additional measures 12-week following the programme revealed that participants in the 'standard incentive' were three times more likely to achieve weight-loss goals than participants in the control group, while participants in the 'standard + deposit incentive' group were twice more likely to do so (OR = 2.2, $p = 0.042$). Moreover, those in the 'standard + deposit incentive' group reduced their DRS by 0.4 ($p = 0.045$) relative to the control group. This study shows how lifestyle change is achievable by applying behavioural insights such as loss aversion.

Focus on Cardiovascular Diseases

Most CVDs are preventable by addressing behavioural risk factors such as unhealthy diet and obesity, physical inactivity, tobacco use, and the harmful use of alcohol (World Health Organization, 2021c). Yet, many people do not adopt these healthy lifestyle behaviours, resulting in a high rate of CVDs prevalence and high number of preventable deaths. The following case study shows how a behavioural intervention lowered the risk of developing CVDs (Hellénius et al., 1993).

Case Study 2: Primary Prevention: Lifestyle and Prevention Focus on Cardiovascular Diseases

Diet and Exercise Are Equally Effective in Reducing Risk for Cardiovascular Disease

Executive Summary

In order to promote healthy diet habits and physical activity, an RCT was conducted on a community of healthy middle-aged men who had moderately elevated risk factors for CVDs. The intervention consisted of three treatment arms testing the efficacy of diet, exercise, and a combination thereof on cardiovascular risk factors. The results were positive for all treatment arms showing a significant reduction in the CVDs risk (expressed as 10-year risk).

Problem

Studies show that a sedentary lifestyle and lack of physical activity along with unhealthy dietary patterns of high calories, fat and sugar and low in fibre content are associated with an increased risk of cardiovascular diseases

(CVDs). However, despite the evidence, peoples' behaviours do not align with best-practices required to prevent poor cardiovascular outcomes. Self-control problems in diet occur because choices and their related consequences are separated in time.

Solution

For this reason, to test the impact of diet and exercise and the combination of the two on cardiovascular risk factors, a six-month RCT was conducted with 157 healthy men aged 35–60 years with moderately raised cardiovascular risk factors randomised to four groups: Control ($n = 39$), Exercise ($n = 39$), Diet ($n = 40$), and Exercise + Diet ($n = 39$). Participants in the mentioned groups received individual information about exercise, diet, and exercise plus diet, respectively, by a physician. Participants in the control group were told to continue their lifestyle as before.

Impact

The Exercise, Diet, and Exercise + Diet treatment arms significantly reduced the estimated 10-year risk of CVDs by 12%, 13%, and 14%, respectively. In addition, the intervention had variable positive impact on improving secondary cardiovascular risk factors such as BMI, waist circumference, blood pressure, systolic BP, diastolic BP, Serum cholesterol, VLDL-cholesterol, and LDL-cholesterol. In contrast, neither HDL-cholesterol nor serum triglycerides were influenced by the intervention. This intervention shows that receiving individual education about exercise and diet is an effective way to change behaviour and improve cardiovascular health.

Focus on Cancer

Approximately 30–50% of cancer deaths could be prevented by modifying lifestyles to include healthy diet and physical activity, or avoiding key risk factors such as tobacco use and the harmful use of alcohol (World Health Organization, 2021d). In fact, adherence to health guidelines for diet and physical activity is consistently associated with lower risks of overall cancer incidence and mortality, including for some site-specific cancers (Kohler et al., 2016). Case study 3 shows how a behavioural intervention lowered risk for people with family history of breast cancer and colorectal cancer (Anderson et al., 2017).

Case Study 3: Primary Prevention: Lifestyle and Prevention Focus on Cancer

Feasibility Study to Assess the Impact of a Lifestyle Intervention ('LivingWELL') in People Having an Assessment of Their Family History of Colorectal or Breast Cancer

Executive Summary

In order to evaluate the feasibility of providing and assessing a weight management programme 'LivingWELL' in Scotland for overweight patients with a family history of breast cancer or colorectal cancer; participants were randomised to a control (lifestyle booklet) or 12-week intervention arm where they were given one face-to-face counselling session, four telephone consultations and web-based support. Results show that the intervention group were more likely to achieve the target weight loss.

Problem

Cancer arises from both genetic and environmental factors. Hence, people with a family history of breast cancer and colorectal cancer are at greater risk of cancer and should follow recommendations for cancer surveillance and lifestyle. In Scotland, the National Health Service (NHS) genetics centre provides early detection and counselling for people with a family history but offers little lifestyle advice.

Solution

Of 480 patients approached, 196 (41%) expressed interest in the study, and of those, 78 (40%) patients were randomised. A two-arm randomised controlled trial was conducted where participants were randomly assigned to a control group (lifestyle booklet) or 12-week intervention arm where the treatment group were given one face-to-face counselling session, four telephone consultations, and web-based support. A goal of 5% decrease in body weight was set. In addition, a tailored diet and physical activity programme were provided. The face-to-face session was designed to be interactive and included a 10 min 'walk and talk' session during which pedometer use as well as walking goals, self-identification of BMI category, and a portion-weight estimate task were discussed. Participants received a personalised energy deficit diet, a personalised graduated-walking plan, guidance on setting personal goals, and guidance on how to make changes habitual and prevent relapses. Motivational interviewing techniques were used to explore self-assessed confidence to change and self-perceived benefits.

Impact

Overall, 36% of the intervention group (vs 0% in control) achieved 5% weight loss. Satisfactory increases in physical activity and reduction in dietary fat were also reported. The results suggest that techniques such as personalised education and training, as well as and goal-setting and feedback, effectively change lifestyle behaviours.

Secondary Prevention: Detection and Monitoring

In the second stage of the behaviour change pathway, it is critical to promote the early detection of NCDs through increasing the uptake of screening and monitoring.

Focus on Diabetes

Individuals with diabetes may not have any symptoms, therefore, screening tests are essential for the detection and diagnosis of diabetes, the earlier the diagnosis, the lower the risk of developing complications. However, many people at risk of diabetes do not attend screening. The following case study demonstrates how behavioural insights can be applied to increase the uptake of diabetes screening (Austin & Wolfe, 2011).

Case Study 4: Secondary Prevention: Detection and Monitoring Focus on Diabetes

The Effect of Patient Reminders and Gas Station Gift Cards on Patient Adherence to Testing Guidelines for Diabetes

Executive Summary

A 3-month pilot programme improved rates of receiving HbA1c and LDL-C tests in patients with diabetes by using a letter signed by patients' physicians which informed them of the missing tests and offered each patient a gift card worth $6 at a local gas station (a 'gas card') if they received the tests. During the 2 years following the pilot program, on average, the target patient population received about two thirds more screenings than the matched comparison group, which provides evidence that a small financial incentive coupled with a written reminder can increase test taking (especially the HbA1c screening). The programme also found greater control of HbA1c levels among patients who had previously missed screenings.

Problem
Effectively controlling diabetes requires a combination of lifestyle changes and regular clinical visits and laboratory tests. Two important laboratory tests for diabetes control are glycosylated haemoglobin (HbA1c), which measures blood glucose control over time, and low-density lipoprotein cholesterol (LDL-C); an indicator of cardiovascular health. Higher patients' adherence to testing helps health professionals to assess the severity of a person's diabetes and allows them to adjust care accordingly.

Solution
A 3-month pilot programme to improve rates of receiving HbA1c and LDL-C tests by providing screening reminder letters and offering a small financial incentive was conducted. The study uses a quasi-experimental design and compared 464 diabetic patients who received a letter reminding them of screenings and a financial incentive for undergoing screening; there were 693 control patients who received neither a letter nor a financial incentive. The letter was signed by patients' physician, informing them of the missing tests, and offering each patient a gift card worth $6 at a local gas station (a 'gas card') if they received the tests. Such small incentives create a sense of immediate reward (also known as 'present bias'—we prefer more immediate payoffs) which aims to overcome the psychological costs (e.g., discomfort, time hassle, etc.) associated with the target behaviour (test-taking). The recipient then could talk with the laboratory staff and redeem a coupon included with the letter. Upon receiving the tests, patients also received an educational packet outlining the importance of the HbA1c and LDL-C tests.

Impact
The pilot programme had generally positive effects on the HbA1c test-taking behaviour of the targeted patients. During the 2 years following the pilot program, on average the target patient population received about two thirds more screenings than the matched comparison group, and a smaller proportion of the targeted group had no screenings at all during the period. The improvement appears to persist for a relatively long time period, given the nature of the initiative. The pilot programme had a limited effect during the pilot period itself, with each targeted patient receiving 0.21 more LDL-C screenings on average during those 3 months.

However, during the following 2 years, the targeted patients were more likely than the comparison patients to receive an LDL-C screening. The results provide evidence that a small financial incentive coupled with a written reminder work to increase test taking (especially the HbA1c screening) and suggest greater control of HbA1c levels among persons who had previously missed screenings.

Focus on Cardiovascular Diseases

The timely detection of CVDs is important so that treatment can begin as early as possible. In order to reduce the incidence of CVDs and other major diseases, some countries have introduced national health check programmes. For example, the NHS Health Check programme was introduced to detect the early signs of CVDs, diabetes, and other chronic diseases for adults in England aged 40 to 74 (NHS, 2021a) with the aim to reach 75% uptake. However, the uptake has been low, with a national average of 44.2% attending the health check between 2012 and 2018 (NHS, 2019). To increase the uptake of the Health Check programme, randomised controlled trials have been introduced incorporating behavioural insights. The following case study demonstrates how behavioural informed interventions increased NHS Health Check programme uptake (Sallis et al., 2021).

Case Study 5: Secondary Prevention: Detection and Monitoring Focus on Cardiovascular Diseases

Increasing Uptake of National Health Service Health Checks in Primary Care: A Pragmatic Randomised Controlled Trial of Enhanced Invitation Letters in Northamptonshire, England

Executive Summary

To increase uptake of the NHS Health Check, patients aged 40–74 who had not previously been diagnosed with CVDs were randomly assigned to receive either a control letter, a ‘cost’ letter mentioning the scarce NHS resources, or a ‘counterargument’ letter including arguments against common barriers to NHS Health Check attendance. Both the cost and counterargument intervention letters significantly increased uptake of the NHS Health Check compared to the control letter.

Problem

The NHS Health Check is a cardiovascular risk assessment designed to reduce the prevalence of cardiovascular disease in the United Kingdom. Still, uptake is lower than the 75% that was anticipated and aspired.

Solution

To increase uptake of the NHS Health Check, a total of 6313 patients aged 40–74 who had not previously been diagnosed with CVDs were invited to an NHS Health Check appointment. Two behaviourally informed letters were tested against the usual invitation letter, i.e., the control letter. The 'cost' letter was designed to encourage patients to make the most of the scarce NHS resources, saying that the General Practitioner (GP) has already set aside funding for the health check ($N = 2105$). The 'counterargument' letter included arguments against common barriers to NHS Health Check attendance, e.g., not wanting to attend as the person feels well ($N = 2085$). Both interventions were sent by a GP (which is a behavioural insight known as the 'messenger' effect: we are heavily influenced by who communicates information, especially the perceived authority of the messenger, whether formal or informal).

Impact

Compared to the control letter, the 'cost' intervention letter increased the uptake by 4.33% and the 'counterargument' intervention letter increased attendance by 5.46%. This study reveals the impact of altering the content of a behaviourally optimised letter delivered by an influential messenger—the GP. Therefore, it is possible to optimise content and alter the messenger to increase uptake. These behavioural insights are potentially transferable to other screening programmes, because the tested two messages have broad applicability. Another important implication is the potential of using messages that are tailored for different target audiences.

Focus on Cancer

Cancer is more likely to respond to treatment well when it is identified early and may result in a greater chance of survival as well as less morbidity and less expensive treatment. In order to detect cancer early, it is important to have early diagnosis to identify symptomatic cancer cases at the earliest possible stage, as well as screening to identify individuals with abnormalities suggestive of a specific cancer or pre-cancer who have not developed any symptoms and refer them promptly for diagnosis and treatment. For example, the NHS offers a range of screening tests in the UK, including cervical, colorectal, and breast cancer screening (NHS, 2021b).

A common challenge for national screening programmes is finding simple, effective, and inexpensive strategies to increase screening uptake in the population, and hence, behavioural insights focused on increasing the uptake of screening offers potential to influence cancer outcomes. The following case study showcases how behavioural insights have helped to increase the uptake of cervical cancer screening (Huf et al., 2017).

Case Study 6: Secondary Prevention: Detection and Monitoring Focus on Cancer

Behavioural Text Message Reminders to Improve Participation in Cervical Screening: A Randomised Controlled Trial

Executive Summary

In order to increase participation in cervical screening, different behavioural text message reminders were sent to women aged 25 to 64. Researchers found that women aged 30 to 64 years who received General Practice endorsed SMS reminders were more likely to participate in cervical screening. Additionally, women who received a simple reminder were also more likely to participate. As for women aged 25 to 29 years, participation was more likely for women in the GP endorsement group.

Problem

Cervical screenings can save lives. If all eligible women attended screenings regularly, 83% of cervical cancer deaths could be avoided. Recent numbers showed a decrease in cervical screenings. Text message reminders (SMS-R) have been proven to be efficient at increasing the participation in breast and bowel cancer screenings.

Solution

To test the efficacy of behavioural text message reminders at increasing uptake of cervical screening, women aged 25 to 29 years were randomly assigned to either a no text message reminder group (‘no SMS-R’ group) or an ‘SMS-R group with General Practice (GP) endorsement’, while women aged 30 to 64 years were randomly assigned to seven different groups:

- No SMS-R (control group, $n = 1568$).
- A simple reminder to attract attention and enhance the salience of screening ($n = 1522$).
- GP endorsement (the messenger effect: we are heavily influenced by who communicates information, especially the perceived authority of the messenger, whether formal or informal, $n = 1493$).

- Total social norms messages (informing how many have participated, $n = 1514$).
- Proportional social norms messages (informing what proportion has participated, $n = 1488$).
- Gain-framed messages focusing on the benefits of screening ($n = 1560$).
- Loss-framed messages focusing on the costs of not screening ($n = 1507$).

Impact

The primary outcome measured was the proportion of women screened in each of the groups after 18 weeks. Among women aged 30 to 64, compared to the control group (34.4%, $n = 540$), women in the GP endorsement group (38.4%, $n = 575$) were 1.19 times more likely to participate in the screening, while women in the simple reminder group (38.1%, 580) were 1.18 time more likely to participate. No other significant differences between control and other groups were detected. Among women aged 25 to 29 years, participation was 1.29 more likely for women in the GP endorsement group (31.4%, $n = 466$) compared to women in the control (no SMS-R) group (26.4%, $n = 384$).

Tertiary Prevention: Treatment and Adherence

In the third stage of the behaviour change pathway, it is crucial to encourage individuals who have been diagnosed with NCDs to adhere to the treatment and recommendations provided by physicians, so as to prevent the onset of complications.

Focus on Diabetes

Once an individual has been diagnosed with diabetes, the most important behaviours to manage diabetes are having a healthy diet, being physically active, metabolic monitoring, and medication adherence (Greenwood et al., 2017). People's ability to adhere to positive self-care behaviours determine how well their conditions can be managed, and the extent to which complications can be prevented. However, many people living with diabetes have problems adhering to healthy lifestyles and treatments (Capoccia et al., 2016). In fact, approximately 80% of the NHS diabetes spending goes towards treating complications such as blindness, kidney failure, heart attacks, stroke, and lower limb amputation (Hex et al., 2012). If people living with diabetes can adopt healthier lifestyle behaviours, they can better manage their conditions and reduce the risk of complications and provide significant savings for the healthcare system. The following case study illustrates how behavioural insights can be applied to increase the adopting of a diet programme among people living with diabetes (Gopalan et al., 2016).

Case Study 7: Tertiary Prevention: Treatment and Adherence Focus on Diabetes

Randomised Controlled Trial of Alternative Messages to Increase Enrolment in a Healthy Food Programme Among Individuals with Diabetes

Executive Summary

To increase the enrolment of diabetic patients in a food programme designed to maintain a healthy diet, patients were randomly sent one of four different messages. All four messages revealed significantly higher programme enrolment rates compared to a no message control group, with the behaviourally enhanced active choice message achieving the best results.

Problem

Adults with Type 2 diabetes who maintain a healthy diet can reduce their risk of experiencing cardiovascular complications. However, maintaining a healthy diet is often challenging, especially considering the increased cost of healthier food options. Enrolment rates to the HealthFood (HF) programme were low, with less than half of eligible members with Type 2 diabetes taking part in the HF programme.

Solution

A sample of 3906 adults with Type 2 diabetes were randomly assigned to one of five groups in order to test the effect of diabetes-focused messaging on enrolment in the HF program:

- Control group ($N = 791$), received no message.
- Treatment group 1 ($N = 793$), received a diabetes-specific email that mentioned two potential health benefits for individuals with diabetes (better sugar control and weight management).
- Treatment group 2 ($N = 812$) received a diabetes-specific email which included a recommendation from an HF member with

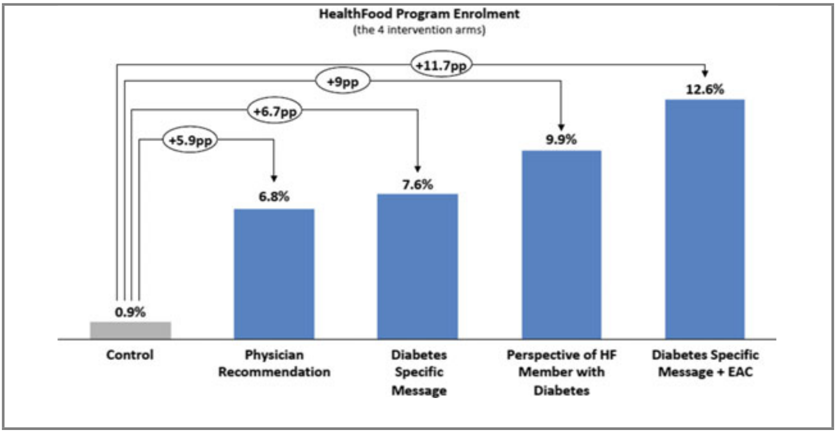
diabetes to join the HF programme. This is known as the messenger effect: we are heavily influenced by who communicates information, especially when there are demographic and behavioural similarities between the messenger and the recipient.

- Treatment group 3 ($N = 752$), received a diabetes-specific email with a physician's recommendation to join HF; which is another variety of messenger effect: we are affected by the perceived authority of the messenger (whether formal or informal).
- Treatment group 4 ($N = 758$), received a diabetes-specific email + an 'enhanced active choice' (EAC). Patients receiving the message were asked to make an immediate choice between two options: 'Yes! I want to activate the HealthyFood benefit and get up to 25% cash back on the healthy food I buy' or 'No, I'd prefer not to activate and continue paying full price for my healthy food purchases'. This intervention utilised behavioural insights related to incentives: our responses to incentives are shaped by predictable mental shortcuts such as strongly avoiding losses (we dislike losses more than we like gains).

All treatment messages contained common elements: a personalised subject line, a description of the benefits of the HF programme and a mention of two potential health benefits for individuals with diabetes (better sugar control and weight management).

Impact

Enrolment to the HF programme was measured one month after the first email. All four experimental groups had significantly higher HF enrolment rates compared to the control group ($p < 0.0001$ for all comparisons). Moreover, a pairwise comparison of the experimental groups revealed a difference between the diabetes-specific message group (7.6%), and the diabetes-specific message with the EAC group (12.6%, $p = 0.0016$).



Focus on Cardiovascular Diseases

For people living with CVDs, adopting and sustaining healthy lifestyle behaviours such as healthy diet, physical activity, cessation of tobacco use, and avoiding the harmful use of alcohol are important to help them manage their blood pressure, blood lipids, blood glucose, and body weight. In addition, taking medication for hypertension and hyperlipidaemia are necessary to reduce the risk of heart attacks and strokes among people with these conditions. The following case study demonstrates how behavioural insights applied to the design of financial incentives for both physicians and patients reduced cholesterol levels among patients with high cardiovascular risk (Asch et al., 2015).

Case Study 8: Tertiary Prevention: Treatment and Adherence Focus on Cardiovascular Diseases

Effect of Financial Incentives to Physicians, Patients, or Both on Lipid Levels: A Randomised Clinical Trial

Executive Summary

In order to reduce levels of low-density lipoprotein cholesterol (LDL-C) among patients with high cardiovascular risk, an RCT was conducted using a variation of financial incentives targeting physicians and patients. Incentives given to both physicians and patients significantly improved adherence to prescribed medication that aimed to reduce the cholesterol levels compared to control as well as other financial incentives targeting only physicians or patients.

Problem

Even though statins are rather low-cost medication which helps patients reduce their risk of cardiovascular diseases by reducing low-density lipoprotein (LDL-C) levels, physicians are under-prescribing them and patients are non-adherent to the prescribed medication. In order to keep patients' cholesterol at healthy levels, higher prescription, and adherence rates are needed.

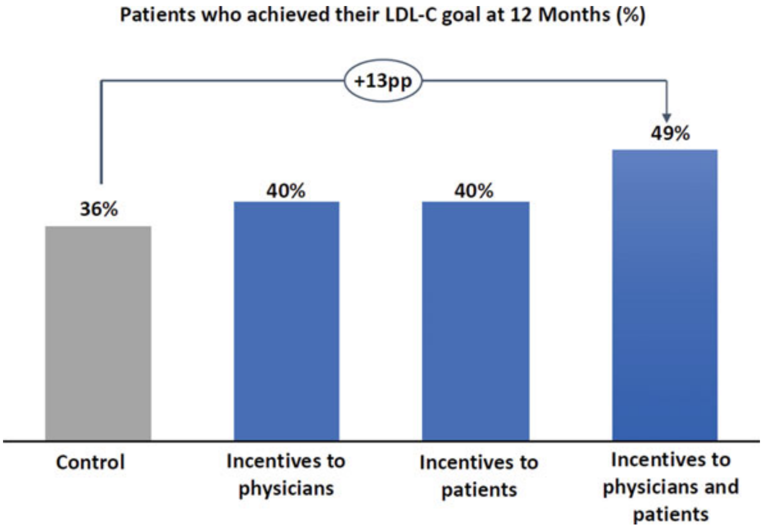
Solution

Physicians were randomly assigned to either a control whereby physicians and patients did not receive any incentive, and three treatments: a) physician incentives, whereby physicians were eligible to receiving up to $1024 per enrolled patient meeting LDL-C goals, b) patient incentives, whereby patients were eligible for the same amount, distributed through daily lotteries tied to medication adherence, or c) shared physician–patient incentives whereby physicians and patients shared these incentives. The interventions continued for 12 months, and patients were followed up for an additional three months.

Impact

The results of the study showed that the shared incentives that targeted both physicians and patients significantly reduced the levels of cholesterol compared to the control. Cholesterol levels of the aforementioned group were significantly reduced by an average of 8.5 mg/dL, from 33.6 mg/dL to 25.1 mg/dL. At 12 months, 49% of patients in the shared physician–patient incentives group had achieved their LDL-C goal compared with 40% in the physician incentives, 40% in the patient incentives, and 36% in the control ($P = 0.03$ for comparison of all 4 groups).

At 15 months, three months after stopping all incentives, LDL-C values remained stable implying that the intervention, up until three months, had a long-term impact. The superiority of a shared approach suggests that treatment success is driven by both, provision of medication by clinicians and patient adherence to that medication. The incentives are likely to reinforce both provision of medication and adherence to medication when tied to those activities. Indeed, making rewards action-specific is a fundamental behaviour change principle.



Focus on Cancer

Upon the diagnosis of cancer, treatment options often include chemotherapy, radiotherapy, medication, and/or surgery. The prescription of self-administered oral chemotherapy (or oral therapy) is an increasingly prevalent treatment, which involves cancer patients taking the oral agent in tablet, capsule, or liquid form. Oral therapies have clear advantages—it offers flexibility and convenience for patients and minimises disruptions to their daily activities. In fact, 89% of patients in a study reported a preference for oral therapy over infusional therapy (Schneider et al., 2013). Maximising adherence to oral therapy is important to improve overall survival and life expectancy. However, there are many barriers to adherence among patients, such as forgetfulness, wanting to avoid side effects, and feeling depressed of overwhelmed (Krikorian et al., 2019). These barriers are pronounced among teenage and young adult patients, whose treatment adherence are affected by emotional functioning (depression and self-esteem), health beliefs (perceived illness severity and vulnerability), and family environment (parental support and parent–child concordance) (Kondryn et al., 2011). It is important to address the barriers to adherence, as non-adherence to treatment increases the risk of disease recurrence. The following case study illustrates how behavioural insights applied in a video game intervention improved treatment adherence among teenage and young adult cancer patients (Kato et al., 2008).

Case Study 9: Tertiary Prevention: Treatment and Adherence Focus on Cancer

A Video Game Improves Behavioural Outcomes in Adolescents and Young Adults with Cancer: A Randomised Trial

Executive Summary

In order to increase adherence of prescribed treatment regimen among adolescents and young adults with cancer, participants played a behaviourally informed video game where they control a nanobot to ensure that virtual patients engage in positive self-care behaviours, such as taking oral chemotherapy to fight cancer cells and taking antibiotics to fight infection. This gamified intervention led to an increase in adherence rate compared to the control group.

Problem

Patient non-adherence to treatment regimens is a common problem. Adolescents and young adults (AYA) with cancer often fail to adhere to prescribed treatment regimens, especially self-administered treatments such as oral chemotherapy. This poses a significant problem because cancer incidence is the leading cause of non-accidental death among AYA.

Solution

To tackle the adherence challenge, a randomised controlled trial testing the impact of a behaviourally informed video game was conducted. Following a baseline assessment, a total of 375 male and female patients from 34 medical centres in the United States, Canada, and Australia, with the following criteria were randomly assigned to the intervention or control group: between 13 and 29 years old had an initial or relapse diagnosis of a malignancy and were currently undergoing treatment and expected to continue treatment for at least four months from baseline assessment. The intervention was a video game that translated behavioural objectives around cancer treatment and care into game structure. The game included destroying cancer cells and managing common treatment-related adverse effects such as bacterial infections, nausea, and constipation by using chemotherapy, antibiotics, antiemetics, and a stool softener as ammunition. To win, players control a nanobot to ensure that virtual patients engage in positive self-care behaviours, such as taking oral chemotherapy to fight cancer cells and taking antibiotics to fight infection.

Impact

Assessment was conducted one month and three months after the start of the intervention. Outcome measures included adherence, self-efficacy, knowledge, control, stress, and quality of life. For patients who were prescribed prophylactic antibiotics, adherence to trimethoprim-sulfamethoxazole was tracked by electronic pill-monitoring devices (n = 200). The video game intervention increased adherence rate by 9.8% compared to the control group. Changes in cancer-specific self-efficacy and knowledge about cancer through the video game contributed to increase in adherence. Similar gamification approach could be directed towards a variety of chronic diseases where the role of behavioural factors is central to management of the disease. Gamification works because it implements behavioural insights such as affect (emotional responses can be very rapid and automatic and our emotional associations created by the game can powerfully shape our learning and actions).

Implications for Practice

The appeal of applying behavioural insights or nudge interventions in healthcare is self-evident—it offers simple and low-cost forms of interventions that are often more acceptable than traditional policy instruments. Evidence from a large number of behavioural intervention studies have shown that the application of behavioural insights in tackling NCDs such as diabetes, CVDs, and cancer, can be valuable and can enhance traditional approaches. In this section, we outline a number of areas of inefficiency and waste that may benefit from the application of nudge-type interventions, as well as the opportunities, considerations, and implications for healthcare management. The first three areas—adherence, attendance and take-up, and shared decision making are primary concerned with changing healthcare consumers' behaviour. The other four areas—overtreatment, discharge and handover, hospital-acquired infection, and evidence implementation are concerned with changing healthcare providers' behaviour.

Adherence

Estimates suggest that 30–50% of patients prescribed medications for long-term chronic conditions do not adhere to treatment. Non-adherence contributes to significant medical wastage and medication-related problems leading to hospital admissions, lower quality of life, morbidity, and mortality.

There is opportunity for healthcare management to design interventions around improving rates of medication adherence, particularly for chronic conditions. Promising nudge-type interventions include tailored messages, enhanced reminders, and brief action planning. Healthcare management may also consider working closely with and incorporating technology to design complex interventions such as the Adherence Improving Self-Management Strategy (AIMS)—it employs many nudge-type principles including the use of electronic medication bottles with caps (MEMS-caps) that record data and time of medication bottle opening, providing patient feedback, and the use of action planning. As such, healthcare management may consider setting up nudge teams with multi-disciplinary training so as to leverage on insights from different areas.

Attendance and Take-Up

More than 15 million GP appointments and almost 8 million outpatient hospital appointments are missed in the NHS every year, with the cost of the former estimated at more than £216 million per year and the latter at almost £1 billion per year. These 'did not attends' (DNAs) result in increased waiting times, inefficient use of staff, and lower overall patient care. Closely related to attendance is the take-up of existing healthcare programmes such as cancer screening and NHS Health Check. These programmes often require a certain level of take-up to be cost-effective.

There is clear potential for the application of nudge-type interventions to reduce non-attendance at health appointments and increase take-up of healthcare programmes. For example, the use of reminders and invitations with enhancements (e.g., planning prompts) may help improve attendance. In the design of reminders and invitations, healthcare management may need to carefully consider the demographic characteristics of the patients so as to find the most effective ways of reaching them. For example, with younger patients, incorporating technology (e.g., sending reminders through social media or smart phone applications) may be an effective way, while traditional mails or advertising may be more effective for older populations. Healthcare management may need to conduct some preliminary research on patient samples to better understand their habits and behaviours, in order to design more targeted and effective interventions.

Shared Decision Making

Shared decision making (SDM) is a process in which patients and healthcare providers work together to understand and decide what tests, treatments, or support packages are most suitable. The use of patient decision aids has been demonstrated to be effective compared to usual care to help align care with patient preferences.

When designing interventions for shared decision making, it is crucial to consider that the nature of shared decision making involves two parties—the patient and the healthcare provider. Many interventions target patients in particular, but often neglect the fact that the support of healthcare providers is extremely important. In fact, interventions that target both patients and healthcare providers show the most promise. With this in mind, healthcare management should ensure that proper training on shared decision making is provided for healthcare providers and understand the importance of obtaining their support and ‘buy-in’ for interventions to be successful.

Overtreatment

Treatment that has little evidence of benefit or is excessive in complexity, duration, or cost is a source of considerable inefficiency and waste. Many healthcare providers would order tests that they knew to be unnecessary if a patient insisted. In such cases, the simple provision of cost feedback may help reduce ordering, and it may be further enhanced using effective information design and framing (e.g., the price of one treatment visually depicted as being more expensive yet not more effective than another).

One notable area of opportunity for reducing inefficiency and waste is in the prescription of generic medicines. Generic medicines offer substitutes for branded medicines with the same quality, safety, and efficacy but at 10–80% lower price. Healthcare management may design interventions that ensure better value options with potential cost savings are set as defaults during the prescription process. Healthcare management should also work closely with healthcare providers to ensure that they are able to clearly communicate the benefits and costs of generic versus branded options to patients.

Discharge and Handover

It is important to discharge patients safely and quickly to reduce readmissions, adverse events, and costs. Medical handover is also a critical step in patient care in order to reduce the risk of medical errors and ensure continuity of care and patient safety. However, there are often issues that arise from poor discharge and handover processes that lead to inefficiency and waste in the healthcare system.

Healthcare management may consider enhancing existing forms of communication (e.g., discharge and handover templates) with nudge-type adjustments. For example, clearer presentation of information and prompts may help ameliorate some of these issues.

Hospital-Acquired Infections

One in 16 patients being treated in the NHS pick up hospital-acquired infections, which complicate patient treatment and increase length of hospital stay. As such, hospital-acquired infections are very costly for the healthcare system and may be preventable with appropriate hygiene processes among healthcare providers.

Although there is no easy solution to this problem, various nudge-type interventions (e.g., education, feedback, and reminders) may be employed to improve hygiene compliance. Healthcare management may consider offering these enhancements to conventional interventions to encourage better hygiene behaviours.

Evidence Implementation

Evidence-based practices take more than 15 years on average to be incorporated into general practice in healthcare, and only about half reach widespread clinical use. This presents a source of considerable inefficiency and waste. For example, despite evidence indicating that the implementation of the ‘Sepsis Six’ care bundle can halve mortality within one hour of presentation, median implementation rates are only at 27–47%.

Healthcare management may consider incorporating nudge-type elements when promoting the implementation of new guidelines. For example, promotional and educational documents such as posters and smart phone applications enhanced with visual design details, as well as audit and group feedback on daily implementation rates displayed publicly in the staff break area. Furthermore, implementation may be improved through better design and simply increasing ease of access, such as through smart phone applications or the provision of necessary equipment to perform and document procedures.

The Road Ahead for Applying Behavioural Insights in Health

Moving forward, there should be additional focus on other prioritised areas in healthcare, for example, applying behavioural insights in more types of NCDs (such as asthma and mental health), as well as incorporating new technology and innovative tools that bring artificial intelligence, data analytics, and big data to health decision making.

For example, asthma is a chronic respiratory disease where behavioural interventions may be of importance, particularly in encouraging patient adherence to treatment. In fact, adherence to asthma treatment is only around 50% despite recent advances in behavioural approaches (Strandbygaard et al., 2010). Therefore, there are further opportunities to develop more effective behavioural interventions in the area of promoting adherence to asthma treatment.

Another important area where behavioural interventions may be applied further is mental health. Current preventive interventions for major depressive disorder (depression), such as problem-solving therapy, are effective but expensive. Since three of the major risk factors of depression are behavioural—low levels of physical activity, inappropriate coping mechanisms, and inadequate maintenance of social ties—there is opportunity for behavioural interventions to offer a less expensive way to change behaviour so as to reduce the risk factors for depression (Woodend et al., 2015). In addition, behavioural insights may also be applied to promote the uptake of mental health screening, as well as to encourage adherence to prescribed medication and attending treatment appointments (Hallsworth et al., 2015). Furthermore, stigma surrounding mental health may greatly limit access to care and lower quality of life for individuals affected by these conditions. There are potential opportunities to explore how behavioural insights related to human biases may be applied to overcome stigma related to mental health, so that individuals with mental health conditions can receive the appropriate care and treatment.

Adopting New Technology and Data Analytics to Promote Health Behaviour Change

Future developments in behavioural science can leverage on new technology and data analytics to design more targeted and impactful interventions. For example, new technologies, such as an electronic soap dispenser equipped with a computer chip that records how frequently users wash their hands, can be incorporated into behavioural studies to develop 'smarter' nudges, as well as provide more accurate and timely measurement data (Leis et al., 2020). Furthermore, there are ample opportunities to apply eHealth as well as Web 2.0 technologies in promoting positive health behavioural change.

Finally, data analytics applied to large datasets may reveal distinct behavioural patterns across different subgroups in large populations, which may be informative in designing more tailored interventions for specific groups of people. In addition, they can be used to understand how individuals respond to different behavioural strategies and identify different impacts of an intervention across observable characteristics.

It is important to note that there are no 'magic bullets' when it comes to behaviour change and no 'one-size-fits-all' nudge intervention is guaranteed to work in changing healthcare related behaviours and settings. Therefore, developing effective interventions involves critical steps starting with theory-based behavioural analysis, an appreciation and understanding of context, and the structured selection of possible interventions with particular consideration of acceptability and equity. Healthcare management should also keep in mind that many of the problems within healthcare settings may be complicated and involve multiple parties, and as such, complex interventions involving synergistic combinations of nudges may be more effective than simple nudges at times.

APPENDIX 1: LIST OF HEURISTICS AND BIASES (BLUMENTHAL-BARBY & KRIEGER, 2015)

Affect Heuristic	Representations of objects and events in people's minds are tagged to varying degrees with affect. People consult or refer to an 'affective pool' (containing all the positive and negative tags associated with the representations consciously or unconsciously) in the process of making judgements
Ambiguity Aversion	The display of preferences for known or certain probabilities over uncertain probabilities regardless of actual benefits
Anchoring Bias	The response is strongly biased towards any value, even if it is arbitrary, that the respondent is induced to consider as a candidate answer
Availability Bias	People assess the probability of an event by the ease with which instance or occurrences can be brought to mind
Bandwagon Effect	Bandwagon effect: An accelerating diffusion through a group or population of a pattern of behaviour, the probability of any individual adopting it increasing with the proportion who has already done so
Commission Bias	Tendency towards action rather than inaction
Confirmation Bias	The tendency to perceive more support for one's beliefs than actually exists in the evidence at hand
Decoy Effect	The addition of a dominated choice alternative increases the preference for the item that dominates it
Default Bias/ Status Quo Bias	Individuals have a strong tendency to remain at the status quo, because the disadvantages of leaving it loom larger than advantages
Frequency/ Percentage Framing Effect	Frequency scales generally lead to higher perceived risk
Impact Bias	Failure to anticipate our remarkable ability to adapt to new states. People tend to overestimate the long-term impact of both positive events and negative events
Loss vs. Gain Framing Bias (Loss Aversion Bias)	Losses loom larger than corresponding gains

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Omission Effect	The tendency to judge harmful actions as worse, or less moral than equally harmful omissions (inactions) because actions are more obvious than inactions
Optimism Bias/ Overconfidence	Tendency to undervalue those aspects of the situation of which the person is relatively ignorant and have favourable expectations for an activity and for his/her own prospects in particular
Order Effects/ Primacy and Recency Effect	Information presented at the beginning or end of a series is remembered and chosen more often than information presented in the middle of the series
Outcome Bias	Allowing a prior event or decision outcome to influence subsequent independent decisions
Relative Risk Bias	A stronger inclination to choose treatment when presented with the relative risk than when presented with the same information described in terms of the absolute risk
Representativeness Heuristic	Probabilities are evaluated by the degree to which event A is representative of event B, that is, by the degree to which A resembles B and not influenced by factors that should affect judgments, such as prior probability outcomes, sample size, chance, predictability, and validity
Sunk Cost Effect	The tendency to continue an endeavour once an investment in money, effort, or time has been made

APPENDIX 2: MINDSPACE FRAMEWORK (DOLAN ET AL., 2010)

Messenger	**We are heavily influenced by who communicates information** We are affected by the perceived authority of the messenger (whether formal or informal). Demographic and behavioural similarities between the expert and the recipient can improve the effectiveness of the intervention. We are also affected by the feelings we have for the messenger. We also use more rational and cognitive means to assess how convincing a messenger is
Incentives	**Our responses to incentives are shaped by predictable mental shortcuts such as strongly avoiding losses** (we dislike losses more than we like gains), referencing points (the value of something depends on where we see it from), overweighting small probabilities (hence why lotteries may act as a powerful motivation), mental budgets (allocating money to discrete bundles), present bias (we prefer more immediate payoffs)

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Norms	**We are strongly influenced by what others do** Social and cultural norms are the behavioural expectations, or rules, within a society or group. Norms can be explicitly stated or implicit in observed behaviour. People often take their understanding of social norms from the behaviour of others. Relate the norm to your target audience as much as possible and consider social networks
Defaults	**We 'go with the flow' of pre-set options** Many decisions we take every day have a default option, whether we recognise it or not. Defaults are the options that are pre-selected if an individual does not make an active choice. Defaults exert influence as individuals regularly accept whatever the default setting is, even if it has significant consequences
Salience	**Our attention is drawn to what is novel and seems relevant to us.** Our behaviour is greatly influenced by what our attention is drawn to. People are more likely to register stimuli that are novel (messages in flashing lights), accessible (items on sale next to checkouts), simple (a snappy slogan), and relevant (easier to grab attention at moments when people enter a new situation or life-stage such as moving house, going to university, pregnancy, etc.). We also look for a prominent anchor (such as unusual or extreme experiences, price, and advice) on which to base our decisions
Priming	**Our acts are often subconsciously influenced by cues in the environment** People's subsequent behaviour may be altered if they are first exposed to certain sights, words or sensations, which activate associated concepts in memory. In other words, people behave differently if they have been 'primed' by certain cues beforehand
Affect	**Our emotional associations can powerfully shape our actions.** Emotional responses to words, images, and events can be very rapid and automatic. Moods, rather than deliberate decisions, can therefore influence judgments. People in good moods make unrealistically optimistic judgements, whilst those in bad moods make unrealistically pessimistic judgements
Commitment	**We seek to be consistent with our public promises and reciprocate acts** We use commitment devices to achieve long-term goals. It has been shown that commitments usually become more effective as the costs for failure increase. One common method for increasing such costs is to make commitments public, since breaking the commitment will lead to significant reputational damage. Even the very act of writing a commitment can increase the likelihood of it being fulfilled. A final aspect of commitment is our strong instinct for reciprocity, which is linked to a desire for fairness

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Ego	**We act in ways that make us feel better about ourselves** We tend to behave in a way that supports the impression of a positive and consistent self-image. We think the same way for groups that we identify with. We also like to think of ourselves as self-consistent. What happens when our behaviour and our self-beliefs are in conflict? Interestingly, often it is our beliefs that get adjusted, rather than our behaviour

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CHAPTER 14

Values Alignment in Sustaining Healthcare Innovation Processes

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INTRODUCTION

Innovation is needed more than ever as demands for integrated health and social care grow (SCIE, 2020; NHS, 2021). Challenges around the globe - for example, growing and aging populations, increase in lifestyle-related diseases, climate change related health risks, and of course, the Covid-19 pandemic—have highlighted the fundamental importance of adaptability and innovation in order to sustain healthcare organizations' abilities to deliver, and improve, services over time and to future populations.

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As healthcare needs become more complex, the boundaries between health, social and general care also become more blurred. This is especially the case when we consider the general care of vulnerable populations, where failure to provide adequate preventative care and timely intervention can significantly increase the demands on the healthcare systems (Hewett & Halligan, 2010). The integration of care across the boundaries of traditional services increases the complexity of organization and the need for innovation. For example, healthcare providers may need to reach out to social services and community support in order to prevent health problems that, down the line may place significant additional demands on healthcare resources.

Turning to innovation, this can be understood as “the development and implementation of new ideas by people who over time engage in transactions with others within an institutional order” (Van de Ven, 1986: 590; Newell et al., 2009). This definition reminds us that innovation is, inherently, a social process and one that is influenced by the context into which it is introduced. It also reminds us that the success of innovation involves, not simply the generation of new knowledge and ideas, but also their ongoing acceptance by those who implement and sustain them in practice.

It is widely accepted that innovation in health and social care should be based on best available evidence. Yet, many innovations—even those based on good evidence—fail to spread into practice and/or their uptake remains, seemingly inexplicably, slow or patchy (Greenhalgh et al., 2004). Thus, many innovations remain ‘stubbornly immobile’ (Scarbrough et al., 2015; Walshe & Rundall, 2001) leading some to comment that healthcare innovation often occurs ‘less frequently, less consistently, or less assiduously [than intended] so that little or no benefit is yielded’ (Greenhalgh et al., 2004; Klein & Sorra, 1996).

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One example—and one that we draw upon in our chapter—is a health and social care innovation to tackle homelessness, known as 'Housing First'. This innovation has an extensive and long-standing evidence-base attesting to its health and social benefits for homeless people and has spread widely in some countries such as the USA and Canada. Yet its spread into practice in the UK has been slow and fragmented. A key challenge is that its implementation requires a shift in the mindset and approach of both professionals and service users from a 'staircase model', based on the assumption that treatment (for such issues as drug and alcohol dependency) should precede access to progressively independent levels of housing, towards a model that assumes that, if independent housing is provided first, then—with support—recovery will follow. As with many health and social care innovations, Housing First is also a multiparty endeavour occurring at the intersection of professions and organizations/sectors (health, social services, shelter and housing, the police, etc.) and entails high-stakes and scarce resources.

One reason why innovations fail to spread may be because, in complex, multiparty innovation settings, different stakeholder groups may have different values, underlying assumptions and political/pragmatic concerns about what matters, what works, and even 'what counts' as evidence (Suddaby, 2010; Swan et al., 2016). The alignment of values, we argue, is therefore central to the sustainability of an innovation process. As Radaelli et al. (2017) summarise, innovations that run counter to the dominant 'values of professionals and other stakeholders [are] more difficult to spread into practice', while innovations that spread best often fit with groups' pre-existing values, ways of organising, and doing their work.

Despite acknowledging their importance, the role of values in innovation remains 'largely ignored by researchers' (Greenhalgh et al., 2004: 596). In particular, research has said little about how values come to align in order to sustain an innovation process. In this chapter, we address this lacuna by revealing the ongoing values alignment work that practitioners engage in to sustain innovation processes. Our chapter is structured as follows: first, we provide more detail on why values matter to sustaining healthcare innovation; second, we provide a brief overview of our research context; third, we present findings from our recent systematic literature review on the role of values in innovation within health and social care settings; and finally, we illustrate and discuss the work involved in aligning values through vignettes drawn from two case studies related to the delivery of person-centred innovative care. In doing so, we shed insight on the mechanisms through which values alignment can be accomplished to sustain innovation processes and provide a platform for future research and practice on this important, but neglected, topic.

Why Do Values Matter to Sustaining Innovation?

We know that innovations 'spread best where they come to be promoted or accepted among groups' (Lounsbury & Crumley, 2007; Newell et al., 2009; Reay & Seddighi, 2012; Suddaby et al., 2010). Several studies have shown that healthcare innovations are more readily adopted when they are compatible with an adopter's values, norms, and desired outcomes (Aubert & Hamel, 2001; Crilly et al., 2010). To be willing to engage, stakeholders must appreciate and accept the importance and promise of a new innovation (e.g. a new model of care) even though, in some cases (as with entirely novel ways of working) evidence pertaining to benefits may be lacking. Even where evidence exists, its legitimacy and applicability to particular organizational settings can be questioned (Campbell et al., 2000; May & Finch, 2009; Murray et al., 2010). Studies have shown that different professional and occupational groups may interpret evidence differently and/or emphasize or value alternative forms of information (Crilley et al., 2010; Gabbay & Le May, 2004; Kyryatsis et al., 2014). In short, evidence does not speak for itself; values also matter.

Theories on innovation processes have gone a long way toward articulating the role of stakeholders, including how their beliefs and sensemaking activities influence awareness of, implementation, normalization and routinization of changes in practice (May & Finch, 2009; Newell et al., 2009). Stakeholders are noted as key to how innovative 'ideas [are] captured from outside, circulated internally, adapted, reframed, implemented and routinised in a service organization' (Garud et al., 2013; Greenhalgh et al., 2004; Swan et al., 2016;). In May and Finch's (2009) widely cited (especially in healthcare) 'Normalization Process Theory' (NPT), for example, the authors suggest that new models of care become 'normalized' and sustained within an organization via four generative mechanisms: 'coherence', 'cognitive participation', 'collective action', and 'reflexive monitoring'. While such mechanisms explain how stakeholders come to be aware of and implement new innovations, they say less about why they participate and engage in the first place.

Values are critical to stakeholders' emotional commitments to particular courses of action and, as such, to their willingness to engage in innovation (Suddaby et al., 2010). Values inform what is perceived as relevant, as well as our ‘ethics, preferences, needs, hopes, actions and expectations’ (Fulford, 2008). Values incur, then, emotional and identity-based commitments that shape peoples’ decisions and political actions, informing how evidence is understood or legitimized. Innovations that are authentically accepted as legitimate and valued, are more likely to encourage an internalization and willingness among stakeholders to invest time and effort in change-making (Gustafson et al., 2003; Klein & Sorra, 1996; Reay & Seddighi, 2012). Therefore, when stakeholders’ values align to those embodied in an innovation (e.g. a new model of care), they may be more willing to participate in implementing and normalizing it within their own practices. Aligned staff and model values have also shown, more broadly, to predict service effectiveness (Kouzes & Posner, 1996), staff engagement (Mondros & Wilson, 1994) and efficacy (MacAteer et al., 2016). Ultimately, where values align, and new models of care embody key values of existing stakeholders, innovations are likely to spread more easily (Ferlie et al., 2005).

In contrast, other research has shown that where values misalign or conflict, as is often the case in the multi-professional field of healthcare, innovations are less likely to be sustained (Aubert & Hamel, 2001; Ferlie et al., 2005; MacAteer et al., 2016). In mental health, for example, Krogh (1998) reported that people with disabilities felt their involvement was ‘tokenistic’ when providers’ valued medical or charity models, relative to when they valued independent living, participation, self-determination, power sharing, diversity, or social justice. Where stakeholder values conflict with one another, or with the innovation itself, it proves much more difficult to change practice at (Swan et al., 2016).

Overall, these kinds of studies point to the fact that values, not just evidence, matter to sustaining innovation in health and social care. However, quite how values embodied within an innovation and held by key stakeholders come to align requires closer attention.

Our Research Studies and Context

To understand how values come to align in order to achieve innovation in health and social care, we first conducted a systematic literature review based on key articles concerned with value alignment and innovation in health and social care. We then gathered primary data on value alignment through two case studies of innovation aimed at improving health and social care for homeless individuals. Both cases were concerned with enhancing person-centred models of care. The first focussed on the implementation and spread of person-centred housing provision within homeless services (Case 1), while the second focused on the spread of a peer advocacy service to assist homeless individuals in accessing appropriate healthcare services and support (Case 2).

Homeless individuals are significant consumers of health and social care services in England. Reflecting the various ways in which homeless individuals use care services, the NIHR's school for social care research have completed a number of studies on this population, including research older homeless people (Crane & Joly, 2014) and homeless women (Williamson et al., 2014). Alongside social care needs, individuals in homelessness have considerable health support needs. Indeed, poor health and experiences of homelessness go hand in hand. Individuals who experience homelessness tend to endure alcohol and drug dependence, as well as significantly worse mental health, than individuals in the general or housed population (Aubry et al., 2012; Lyon-Callo, 2008). Physical illness and disability also tends to be much worse in the homeless population. For example, homeless individuals are twenty times more likely to develop tuberculosis than their housed counterparts. On average, they are likely to die between the age of 40 and 44 years old, relative to about 75 years old among housed individuals (Thomas, 2012). Homelessness damages health by various means, for example, by placing individuals in dangerous and difficult living environments, reducing their access to regular health and social care services, and limiting their ability to proactively manage their own health and social support needs, for example, safe medication storage, access to healthy, fresh food, financial support and so on (Hewett & Halligan, 2010). Their difficult living situations mean that homeless individuals are more likely to use acute and expensive NHS care services. One study showed that this group attended A&E six times as often as the housed population, were admitted four times as often, and stayed twice as long (Hewett & Halligan, 2010). As a result, secondary care costs for this group were eight times those of housed patients. There are estimated to be 40,500 homeless people in England (defined as rough sleepers plus those in hostel accommodation) generating secondary care costs of £85 million annually (Hewett & Halligan, 2010).

LITERATURE REVIEW FINDINGS: VALUES ALIGNMENT ACROSS EPISODES OF THE INNOVATION PROCESS

Our literature review sought to understand values alignment across the innovation process and how this can be facilitated. As outlined next, values alignment, as a route to innovation, was shown to be influenced by the clarity and explicitness of values, by stakeholders emotions and sense of identity, as well as by their interactions and relationships.

Clear and Explicit Values

A number of reviewed papers noted the importance of making values 'clear and explicit' when developing innovations. Duarte and colleagues (2014), for example, reviewed organizations that had been commended for their innovation work. These authors found that incorporating innovation into an organization's vision, mission, and values statements, as well as explicitly stated support from senior leadership for innovation, was key to developing changes. Other papers noted how making values of innovation explicit allows for 'staff learning'. Explicit values were said to help innovators understand end-users' needs and preferences around the innovation (Miao et al., 2017). Leaders were often linked to this facilitator of innovation, especially those 'committed' leaders who generate 'clear and shared values' (Walker, 2012) and advance innovation by using these to set a 'common vision' (Harburger, et al., 2013). Leaders were also said to foster alignment by 'crafting policies and practices' in ways that account for stakeholders' values and concerns (Skillman et al., 2017).

As well as mattering to an innovation's development, explicit and clear values were noted as important in the *implementation* of change. Values that clearly and explicitly align to existing organizational values, including values for 'collaboration' (Vedel et al., 2013) or 'quality improvement' (Urquhart et al., 2014), as well as values that are embedded within broader national guidelines, were also noted as important. Explicit values were said to increase an innovation's 'perceived compatibility with existing practices' (Baker et al., 2018; Urquhart et al., 2014), as well as the 'rate' at which an innovation will be implemented (Vedel et al., 2013). While important, however, explicit values, alone, were not enough to ensure implementation of innovations. Simmons et al., (2016: 628), for example, described how even when innovative family planning methods aligned to stakeholders' value for 'service-user-centred care', implementation of these practices was stalled, at least in part, by a ‘lack of clarity about how to actually make changes, as well as other logistical issues’ (Simmons et al., 2016).

Identity and Emotional Commitment

A number of the reviewed papers also touched the impact of stakeholders’ identity and emotions on values alignment and the ability to sustain innovation. As Ekeland (2015), for example, describes, stakeholders judge whether innovations should be implemented based, not just on science or facts, but also on their ‘emotions and values’. Reflecting this sentiment, Sorly et al. (2019) described nurse’s emotive responses to innovations. In this study, nurses were described as feeling a sense of conflict when an innovation is perceived as being ‘imposed’ by ‘higher-ups’. Sabus and Spake (2018) similarly describe how even in cases where stakeholders perceive innovations as aligning to their values, their emotions can be inhibitory to the implementation of change. In this research, physical therapists were described as accepting innovations that align to their value for patient-centred care. However, therapists were found to reject the innovation if they felt it would negatively affect their own career.

Emotive responses to innovations were also not limited to professional stakeholders. In one study, Stokke (2017) describes the implementation of a ‘social alarm’ for elderly individuals in home care contexts. The ‘social alarm’ is said, on the surface, to embody values that are appreciated by the elderly, their carers, and family members. These values include allowing the elderly individual to ‘stay at home longer, feel safe, never feel abandoned, have privacy, and stay active and independent’. For family members and carers, the alignment of the innovation to their values offers a sense of comfort because it means loved ones are ‘safe and able to reach someone’. In contrast, elderly stakeholders describe how the values embedded in the alarm also generate feelings of being ‘fragile, passive, anxious and dependent’. These feelings, in turn, were said to reduce their use of the alarm over time. Ultimately, this paper demonstrates how stakeholder groups, particularly their emotive responses, may not all concur with the values underpinning an innovation so that alignment in any one group does not guarantee implementation in practice.

Finally, in terms of sustaining innovations, Greenhalgh and colleagues’ paper (2012), suggest that judgements about an innovation’s sustainability are strongly influenced by ‘conflicts in stakeholders’ values’. Such conflicts are said to arise from what stakeholders believe they stand to gain or lose through changes. Interestingly, however, these scholars further suggest that most of ‘innovation dissenters’ (i.e. those who do not want to see the innovation sustained) had actually not ‘bought into’ the values of the innovation when it was being developed.

Social Interactions and Relationships

Finally, social interactions and relationships among stakeholders were also noted as important to values alignment in a number of the reviewed papers (D’Souza et al., 2013; Mitchell, 2009; Mitchell et al., 2012; Swinkels et al., 2018; Thompson et al., 2013; Walker, 2012; Windrum, 2014). Social interactions are said to enable an ‘understanding of different values’ (Windrum, 2014) which, in turn, allows stakeholders to develop a ‘shared sense of identity’ (Mitchell et al., 2012), ‘collaboration’ (Swinkels et al., 2018)] and ‘knowledge and experience of each other’. Direct stakeholder interactions were also described as a means to overcome ‘competing values’ and the ‘tension’ that can arise from these, which are part and parcel of any professional group working, that can ultimately hinder innovativeness if unaddressed (Vito, 2017). The reviewed papers suggest that such interactions and relationships can be supported through stakeholders ‘working side by side’ or ‘networking’ with each other (Thompson et al., 2013). Environments that support ‘deeper staff conversations’, offer exposure to ‘national leaders’, and develop ‘new approaches to organizational planning’ were noted as conducive to social interactions (Walker, 2012).

While this literature is not extensive, the studies provided valuable initial insights as to the role of values in sustaining an innovation process. Next, we highlight findings from our case studies in order to probe values alignment further.

VALUES ALIGNMENT ACROSS INNOVATION EPISODES: CASE VIGNETTES

In this section we draw upon our case study data to present two vignettes that illustrate, in more depth, the role of values alignment in developing and sustaining innovation processes. The vignettes illustrate the need for values alignment across all episodes of the innovation process, from development and implementation to further spread and scaling up.

Vignette 1 'Housing First': Values Alignment in the Development and Implementation of an Innovation

Central England Housing First (CEHF) is an organization aimed at implementing a 'housing first' model which aims at providing homeless people with housing as a priority over the traditional notion of individuals needing to show 'readiness' for housing. Housing First programmes now have a well-established evidence base, having been implemented in many parts of Europe and North America. Following a slow start, this Housing First innovation is now being picked up and implemented in an increasing number of locations in the UK and the Republic of Ireland too.

The Housing First model in England is based around a set of seven principles, including individuals' right to a home, their right to care based on their strengths, their right for choice and control in decision-making, and their right to expect engagement with service providers. CEHF had successfully been awarded a tender for funding to implement Housing First within their region. The decision to tender was described as "*a quick and easy sell*", with seven housing, health and social services organizations deciding to work together for the multi-million-pound contract "*to make a difference… make a positive impact*" (Jay). Jay describes how shared values were a unifying force that allowed stakeholders to address any differences:

> There were other organizations that very much share our values at that initial stakeholder meeting...we reminded ourselves of those seven principles of Housing First consistently in terms of... that's the endgame here …

The innovation meant that CEHF had to work with a number of collaborators from public and private sector organizations, charitable organizations, working across health, social care, housing, community and emergency services. Having a clear set of values that could be communicated to potential partners served as a useful process to get collaborators on board with the implementation of Housing First. In keeping with the principles of the Housing First model, co-production with individuals with experiences of homelessness, mental health, substance abuse, and domestic abuse contributed to delivery of the implementation project and was also a core value for those involved. These values became part of the innovation implementation process in three ways: (1) through the development of a values-driven Quality Assurance Framework (QAF), which guided the implementation and feedback as well as the assessment processes; (2) through using a values-based interview as part of the staff recruitment process; and (3) Housing First values were enacted through relationships built during implementation.

Using the qualitative assurance framework feedback loop led to the identification of barriers to implementation where values alignment with Housing First principles, by particular individuals in health and housing sector organizations, was weak. This led CEHF to address the issues identified. For example, people with lived experience participated in 'practice forums', teaching skills and in offering training. Workshops for landlords were also "*really, really useful*" (Jess) because they demonstrated the intense level of support available to Housing First service-users, which, in turn, reduced tensions over potential anti-social behaviour, rent arrears, or property damage. Essentially, the QAF feedback loop provided feedback and continuous improvement in all areas. It ensured that stakeholders had a voice and a platform to express areas of need or where things were not working which aided the implementation process across the diverse range of delivery organizations.

Along with a values-driven QAF, CEHF also used a values-based interview for staff recruitment. This type of interview was seen as a fast way of bringing people into the project who were aligned to the Housing First model and so were more likely to enact the model and its values in their everyday practice. Here, first round interviewing, which was conducted by the co-production panel, asked candidates to express how they felt about particular issues. The interviewees rated responses on how strongly they agreed or disagreed, illustrating whether "*they were aligned with this way of working*" (Alex).

Finally, a 'relationship-based' model of working formed a core part of the implementation process. It brought a variety of stakeholders together beyond the immediate team where emphasis was placed on sustaining a "*web of relationships*" with a range of external partners, the result of CEHF's structural complexity. These collaborative relationships were a key to overcoming challenges that arose early in the project, including an unexpected shortage of referrals from Local Authorities. Relationship-building across partner organizations also had a positive effect on "*how aligned the actual support feels to* [service-users]" (Mo). Overall, all parties in the research interviews stressed the value of relationships and relationship building, whether on the front line with service-users, or amongst the service providers in housing, health and local authority. They describe this investment of time as critical.

> It's taken us a long time to get to know people and actually ... it's a lot of legwork just trying to build that initial relationship and put fires out... These people are going to be with us for a while and it's a marathon, not a sprint... (Jess)

Vignette 2 'Peer Advocacy for Healthcare': Values Alignment in Sustaining the Spread and Scaling up of Innovation

This second case is based on a 'Peer Advocacy' innovation wherein individuals currently experiencing homelessness were connected with volunteers who had lived experience of homelessness (peer advocates) to help them access healthcare services. The peer advocates acted as mediators between service-users and healthcare providers to help the service-users navigate the system, enabling a better uptake of healthcare advice, appointments, and treatment. Organization G was a peer advocacy organization that was "*set up by people who have experienced homelessness*" and has been guided by peer research findings that people *"need to keep busy to get out stay out of homelessness"* and *"need something to do where they feel a sense of achievement"*. Another peer research finding is that homeless services *"don't really think that health is their business and health sector organizations don't really feel like homelessness is their business"* making *"homeless people's health a massively underserved area" (Lex)*. The evaluation of the implementation of the peer advocacy model locally had evidenced its success and so a decision was made to scale the innovation nationally.

The development of the Peer Advocacy model was guided by certain beliefs and values around homelessness. The core beliefs that drove Organization G were (i) the whole community benefits from effectively tackling homelessness, (ii) people are society's most valuable resource and everyone can contribute, (iii) there is no "them" and "us"—only us, and (iv) supporting people to participate creates more effective services and enables progression from homelessness. The Peer Advocacy model was developed with these core-beliefs in mind to improve the healthcare uptake of people with homelessness experiences.

The role of values in sustaining the spread of this innovation was seen during the scale up process. When peer advocacy had been developed within Organization G there had been clear values alignment among stakeholders. For example, organizational members noted similar reasons for wanting to get involved in the organization.

> ...the opportunity came up to join the...team, I was just so invested in it by then... so passionate about it (Kath)

> ...I ... always felt like the whole reason that I wanted to do research was to make sure that people ... have like a platform for their voices being heard. [Organization G's] ethos really resonated with me (Ali)

> ...the thing that has always driven me is that people's rights have not been upheld...I get my rights and they don't ...they don't know what their rights are, so they can't claim them ... so pretty much every job I've ever done has had that at its core... (Lex)

However, with the scaling up of the model, the potential lack of values alignment during the spread of the innovation at a national level was cause for concern. Concerns were raised about other organizations not having similar work practices guided by different organizational culture and values. As Kath expressed:

> ...working in partnerships is really helpful and it means that we have that local connection, and that's really beneficial...But obviously we have these really strong values.... Certain things that we have in place, we want to make sure that that's applied in the different areas as well

Advocates were worried that organizations may implement the innovation incorrectly. There was a perception that the partnership needed values alignment with the values that had driven the innovation in Organization G.

Lex describes how *"part of what we wanted to do by working in partnership with organizations was try and embed those values"*. She further explains how Organization G "*started on that foundation of values. So how we value lived experience… how we* [work] *from the ground up in the way that we make decisions … our partner organizations aren't intrinsically like that…They don't really live and breathe lived experience*".

To sustain the innovation in its original form, with its original values, Organization G engaged in work to ensure values alignment with external partners. This involved acknowledging the challenges of the model and overcoming those by developing relationships to build values-based trust with partners. For example, Lex notes the importance of building relationships to sustain any the innovation:

> …no way we were going to get funding from the outset without any kind of background relationship…most areas never heard of [us]…what makes innovation work and what makes innovation scale up would be relationships… building and playing out the relationships between peers and their decision-makers…

Importantly, Lex further describes how these innovation-sustaining relationships are underpinned by an alignment of values: *"The sustainability of the model really relies on system actors accepting the value of it and [staying] invested in it on an ongoing basis"*.

MECHANISMS THAT ENABLE VALUES ALIGNMENT

In this chapter we explored the role of values in sustaining innovation processes and identified some of the key mechanisms that enable values alignment. Our research, albeit exploratory, suggests further that some of these mechanisms may be more (or less) prominent than others during different episodes of the innovation process. Our preliminary model of values alignment is depicted in Fig. 14.1 and the key mechanisms are discussed further, next.

Figure 14.1 shows that for innovation to be sustainable, it requires the alignment of service-user, service, provider and innovation values within the innovation processes. Through our analysis we have identified four key mechanisms that enable values alignment among stakeholders: (1) identification of stakeholders with innovation values, which plays an important role across innovation episodes; (2) developing strong trust-based relationships which is especially important during innovation spread; (3) co-production of values with service users, which plays an important role in the innovation development and implementation processes; and (4) clarity of innovation values which again is important across the innovation episodes. These four mechanisms are explored in more detail next.

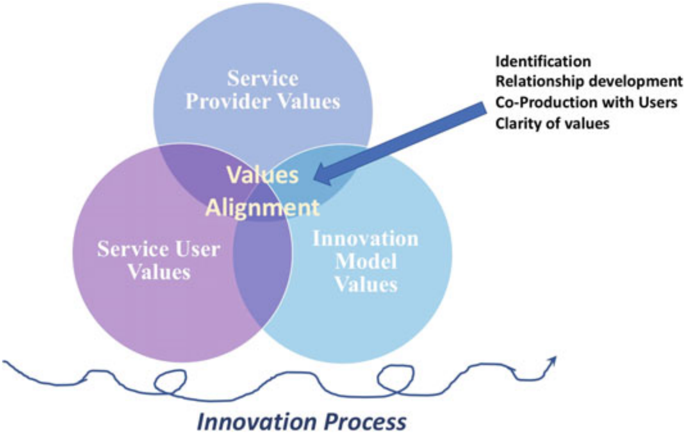

Fig. 14.1 Values alignment in innovation

Identification with Innovation Values

It is clear that a strong identification among stakeholders with the values underpinning an innovation is important. As per the literature review (e.g. Ekeland, 2015), values are shown to entail emotional commitments and, where they align with a model of care, allow key protagonists to identify closely with the innovation process. This identification is associated with passion, a desire to drive the innovation forward and emotional attachment to the innovation's success (or otherwise). Identification with innovation values also works to counter the tensions created when an innovation has origins that are external to adopting organizations (Sorly et al., 2019).

Building on the existing literature, our cases also point to the important role of identification. Although externally generated innovations can be perceived as imposed or unworkable in practice (Sorly et al., 2019, i.e. the well-versed 'not invented here' problem), this was not necessarily true in our CEHF case. Here, while the innovation originated externally, strong identification with the values embedded within the innovation model (Housing First 'principles') enabled the implementation process. CEHF protagonists emphasise the importance of the principles and values of innovation in the published ideology of the international Housing First 'movement'. They talked about having studied the Housing First model in housing literature and learning from established practice including visits to overseas projects. Their values were shaped by academic and practice examples, internalized, and shared among colleagues through collaborative working.

Conversely, as the Peer Advocacy for Healthcare case shows, whilst strong identification with the values of an innovation model may enable its implementation, it might also constrain further spread and dissemination, particularly where others have not had the opportunity to evaluate and/or embrace underpinning values. In this case, identification with the innovation values is exemplified through the use of a collective term 'Peer Advocacy Clan' to describe members of the organization. A sense of 'family' and of personal association is projected through this language and allows for those involved to persuade and enlist others to join them. By feeling emotional identification with the innovation model, the protagonists regard successful implementation as *personal* success. This strong sense of identity, however, also gives 'insider status' to key protagonists, such that their group identity is enhanced but, at the same time, they are distanced from others ('outsiders') who do not (yet) share these values. They also tend to become protective of the innovation and its underpinning values during the spread of the innovation to a broader group of stakeholders (Vito, 2017), which can create tensions in further spread and sustainability of the innovation. In the Peer Advocacy case, then, values alignment became much less straightforward when efforts were turned to scaling up this innovation by outsourcing it to partner organizations. In discussing this scaling up, protagonists noted their 'hope' and 'desire' that the model, and its embedded values, would remain as close to the original as possible to ensure positive outcomes. Participants also spoke of a wish to 'embed' their own values within partner organizations and a concern that external agencies may not implement Peer Advocacy 'properly'.

Relationship Development for Values Alignment

We know from the systematic review that building trust-based relationships and broader social networks (i.e. 'strong ties' and 'weak ties') are important for values alignment (Thompson et al., 2013; Windrum, 2014) and enable the knowledge sharing needed for innovation (Hansen, 1999). Similarly, in our cases, we see how trust-based relationships, or the lack of them, enable or constrain the implementation and spread of innovation due to values alignment. In the Peer Advocacy case, paramount importance was given to maintaining the original organizations' values once the innovation was rolled-out via external partners and this concern was likely informed by the emergent nature of partner relationships and the ongoing development of supporting resources. In this case, stakeholders had to, essentially, relinquish at least some control over 'their' innovation and the values it embodied to another group. This case shows that emergent relationships where trust is not yet present can hinder the innovation's spread. Hence, trust and strong relationships between stakeholders become important for the stakeholders to feel comfortable about handing over control of their innovation to another group.

The role of broader social networks (weaker ties) is evident in the Housing First case. In contrast to Peer Advocacy, the CEHF innovation emerged in the wake of a growing international movement of recognition and support of Housing First principles. This not only helped to establish a network of relationships amongst key stakeholders groups, but it also propelled the importance of Housing First values for service delivery. The clarity of values becomes important when the broad, multi-agency focus of CEHF is considered, including support of housing associations, private landlords and property developers, community healthcare, local authorities, charities, mental health and addiction services. The scale of these partnerships means that stakeholders come from different professional and personal backgrounds so that values alignment is not guaranteed, as is more likely when innovations are developed collaboratively from the ground up. In this case, resources, whether relational or tangible, helped to ensure values alignment.

Co-production with Service Users to Achieve Values Alignment

As our cases demonstrate, co-production with the service-users is a vital aspect of values alignment for sustaining innovation. In the case of Peer Advocacy, co-production was embodied in the application of the model itself, since those acting as Advocates were service users with lived experience, drawn from homeless and ex-homeless constituencies. In CEHF co-production informed recruitment for professional positions on the team. This type of recruitment process purposely ensured that the values of any new recruit aligned with the innovation and those of the existing team members. CEHF also used co-production in its evaluation of the innovation, which centred on the involvement of service users to ensure that core values were being adhered to in practice. Essentially, the success of the implementation was being measured against values-alignment, not financial or tenancy metrics. Therefore, the alignment of values through co-production was evident across program implementation from participation in design and strategy to recruitment and training.

While previous work has certainly highlighted the importance of co-production for mobilizing and sharing knowledge for innovation in healthcare (Swan et al., 2016), our chapter suggests that co-production plays an equally important part in aligning values, such that key stakeholders are willing to engage meaningfully and effortfully with an innovation process. Importantly, and as the case of CEHF shows, even where a new model of care (e.g. Housing First) has been pre-designed, with its values fully articulated, and shown to be effective elsewhere, co-production remains crucial at the point of implementation as a means to engage the multiple organizations and service users implicated in *appropriating* the model for use within the local context (cf. Hislop et al., 1997).

Clarity of Innovation Values

Whether the innovation model has explicit values built into it, or whether the values are co-produced in action, impacts the further alignment of values. In the Peer advocacy case, for example, the values of the model only became clearer and more aligned as Advocates (ex-service users) began to mediate the relationship between providers and currently homeless individuals. Yet initially, their role and value as advocates could not be taken for granted; advocates often faced the same challenges in attitudes and behaviours towards them as the clients did when trying to help with access to health services. As one interviewee explained "*…go into clinic Y, someone will spray air freshener on [them] when they come in through the door… if they need equipment…you know, they'll make you wait a week…*". It was only as Advocates creatively performed their roles that attitudes and the perceived value of the model began to shift. For example, some began wearing (branded) identity lanyards, which had a significant impact on how they were greeted, and how their roles came to be accepted, by medical staff.

In contrast, the established nature of the Housing First model means it is supported by published ideology, principles, and practices. It is also accompanied by semi-structured practice methodologies, as well as frameworks to guide the quantification of outcomes. As a result, CEHF stakeholders had the option to co-opt some systemized templates and resources. This corroborates earlier findings from the literature that explicit and clear values enabled organizations to gain support (Duarte et al., 2014) and improve the compatibility of the innovation with existing practices (Baker et al., 2018; Urquhart et al., 2014). Nonetheless, clarity of a model's values 'upfront' is not sufficient, per se. As just seen, these values still need to be accepted by those involved in implementing and using the new model of care, which is where further co-production seemed crucial.

Implications for Practice

Our chapter argues that innovation is crucial for sustaining high quality, equitable and affordable service delivery in health and social care and shows the importance of values alignment across the innovation process. Values alignment, or lack therefore, has implications for the successful uptake and acceptance of an innovation. Focusing on the role of values in driving innovation enables us to unpack why some innovations are slow to spread or fail completely to do so (Greenhalgh et al., 2004; Scarbrough et al., 2015). To sustain healthcare innovations, as our chapter demonstrates, it is also important to understand how values alignment takes place and the mechanisms that underpin it.

Aligning values is important across all episodes of innovation, from development through implementation to scaling up. At the start of the process identification with innovation values means that stakeholders are emotionally invested (Ekeland, 2015) in the successful implementation of the innovation. Hence ensuring that partners and stakeholders identify with the values embedded in the innovation itself a key factor in driving the successful implementation of the innovation. Nevertheless, strong identification can also impede the spread of values to external stakeholders, especially if there is lack of trust that the innovation values will hold during the scaling up process. This has important implications for stakeholder and partner selection as innovations travel.

Along with identifying with the values embedded in the innovation, co-producing values among stakeholders—crucially, alignment with values of the end-users of service innovations—enables the innovation's implementation and spread. Co-production of values with service users allows for 'collective sensemaking' around the innovation concerning, not just knowledge about 'what it is' and 'how to do it', but also values around 'what it means for us' and 'should we do it here'. We argue that aligning values, not just knowledge, has an important impact upon the uptake and normalization of an innovation in practice (cf. May & Finch, 2009). If service providers and/or users are not prepared for a change in services or are uncomfortable with new ways of accessing or doing care then that may inhibit the uptake of the innovation. Stokke (2017) hinted at this issue of co-production in their work on social alarms for the elderly, where an innovation that was perceived by healthcare providers and families to increase the safety of the elderly actually made them feel more 'anxious and dependent'. Hence involving end-users in the development of the innovation and co-producing innovation values with end-users plays a significant role in the successful implementation of the innovation.

Finally, values alignment is not without significant challenges. As we have shown, values alignment needs to occur across all aspects of the innovation process for innovations to be sustainable. It entails ongoing work and renewed effort at each step as multiple, and often changing, groups of stakeholders are relied upon to engage in, and embrace, an innovation process over time. Moreover, values are inherently socially and politically *invested,* so any alignment and/or shift would be expected to take considerable time and effort. Our chapter has revealed some aspects that enable this—including clarity of values underpinning an innovation, identification, co-production, as well as contextual factors such as trust-based relationships and strong social ties. However, further work is needed on this important aspect of sustaining innovation for improvement in health and social care.

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CHAPTER 15

Using Big Data Science to Examine Variations in Care Quality

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INTRODUCTION

The rapid advancement of big data analytics has revolutionized information management and utilization across various industries, and healthcare stands out as a particularly notable domain. Previously, the management and analysis of healthcare data were costly, laborious, and time-consuming endeavors. However, with the aid of machine learning techniques, the

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power of cloud computing, and the Internet of Things (IoT), healthcare professionals can now gather vast amounts of data on a daily basis. They endeavor to derive valuable insights from this data by employing the most appropriate data analytics techniques. These techniques encompass a blend of mathematical, statistical, and machine learning methods, enabling predictive analytics, user behavior analytics, and other data analytics approaches that delve into relationships within datasets and forecast outcomes. They play a pivotal role in uncovering hidden issues that may have otherwise gone unnoticed, reducing the expenses associated with medical treatments, predicting epidemic outbreaks, and enhancing the overall quality of care. The ability to leverage these data analytics techniques empowers healthcare professionals to tackle complex challenges, make informed decisions, and ultimately improve the well-being of patients.

Undoubtedly, big data is characterized by its immense size, but volume alone does not encompass all the defining aspects of big data. Commonly, the features of big data are described using the “5V” framework, which includes Volume, Variety, Velocity, Veracity, and Value. Volume specifically denotes the scale or magnitude of the data, highlighting its sheer size. Variety refers to the diverse nature of data structures encountered in big data. This encompasses structured, semi-structured, and unstructured data, which can manifest in various formats such as numeric data, text documents, images, and more. Velocity emphasizes the speed at which data needs to be transported and processed. The advent of technologies like AI, cloud computing, and the Internet of Things (IoT) has enabled real-time processing and analysis of data, catering to the need for timely insights. Veracity pertains to the reliability and trustworthiness of the collected data, and acknowledges the presence of uncertainty, including incompleteness, inaccuracies, and inconsistencies within the dataset. Lastly, value refers to the significance and actionable insights that can be derived from the dataset. The value of big data lies in its potential to provide meaningful information and contribute to informed decision-making processes. By considering these five dimensions, the 5V framework provides a comprehensive perspective on the characteristics and implications of big data beyond its sheer volume.

In the healthcare domain, big data analytics is a relatively new and continuously evolving field, striving to keep pace with the rapid advancements in technology. Notable cases have emerged where big data is leveraged to develop improved treatment plans and predict patients at risk (McNutt et al., 2019). Healthcare providers can also utilize big data to forecast admission trends and optimize staffing arrangements for enhanced operational management (Ricco et al., 2020). Furthermore, governments can apply big data analytics in designing healthcare mechanisms and supervising healthcare systems (Han et al., 2018). Despite its significant potential, the application of big data analytics in healthcare presents notable challenges. The sheer volume of collected data poses a substantial hurdle for healthcare professionals, necessitating the selection of appropriate data and methodologies to generate valuable insights. While electronic health information exchange (HIE) systems enable access to necessary patient data for doctors, pharmacists, and other healthcare providers, concerns regarding cybersecurity and information privacy also arise. Although big data analytics holds the potential to enhance patient experiences and improve the quality of care, many healthcare organizations struggle with a shortage of skilled professionals adept at handling these new technologies. The demand for well-trained healthcare data analysts remains high. Additionally, big data is characterized by its diversity, complexity, and vastness, which present technical challenges to traditional data processing methods. Efficient handling of big data requires specialized tools such as Hadoop and Spark. Overall, while big data analytics offers promising opportunities in healthcare, addressing the associated challenges and ensuring the responsible use of data are essential for realizing its full potential in improving patient outcomes and healthcare delivery.

In this chapter, we direct our attention to the utilization of big data analytics in establishing a sustainable nursing system, drawing upon a series of research that we conducted over the years (Gopal et al., 2021; Han et al., 2018, 2019). Our focus lies in analyzing the nursing home rating systems in the United States, which exhibit significant similarities to the care home rating systems in the UK. Both systems employ ordinal ratings derived from a combination of measures. This similarity enables us to generalize key findings and apply our methodologies to UK systems and similar contexts. The chapter is structured as follows: We commence by introducing the history and rating mechanisms of the nursing home rating system in the United States. This background information is crucial for comprehending the subsequent big data analytics employed to address specific research questions. In the subsequent section, we showcase utilizing big data analytics to identify instances of rating inflation within the US nursing home rating system. Our analysis involves gathering rating data from the Centers for Medicare and Medicaid Services (CMS), along with corresponding financial data from the Office of Statewide Health Planning and Development (OSHPD), and patients' complaints data reported by the California Department of Public Health (CDPH) for over 1200 nursing homes in California. To grasp the significance of high ratings to nursing homes, we empirically examine the key factors influencing the change in star ratings for nursing homes. We identify a significant association between star rating changes and a nursing home's profits, indicating a financial incentive for nursing homes to inflate ratings. Nevertheless, we acknowledge the possibility that star rating improvements may stem from legitimate efforts to enhance service quality. To demonstrate the existence of rating inflation, we employ independent patients' complaint data as a proxy for nursing homes' true service quality and demonstrate that the association between rating changes and financial incentives extends beyond what can be explained by legitimate efforts. Subsequently, we develop a prediction model to assess the extent of inflation. Our results indicate that among the suspected population, 6–8.5% of nursing homes are likely engaging in inflating practices. In the third section, we narrow our focus to the significant variations in the prevalence and scale of COVID-19 outbreaks within nursing homes. The advanced age and high prevalence of comorbidities among nursing home residents make them particularly vulnerable during the COVID-19 pandemic. However, not all nursing homes in the United States have been equally affected. Employing big data analytics on COVID-19 infection analysis across California nursing homes, we delve into the reasons behind varying susceptibility to COVID-19 outbreaks and develop predictive models that can identify such nursing homes. This enables prioritization efforts in prevention and containment during future epidemics. By examining these specific applications of big data analytics, we aim to contribute to the advancement of a sustainable nursing system, leveraging the insights gained from our research to drive improvements in care quality and outcomes.

NURSING HOME HISTORY AND RATING MECHANISMS

During the 1960s, the United States began the process of standardizing the quality of nursing home services, prompted by a study conducted by the Public Health Service (PHS) in 1961 examining the state licensures of nursing homes. The PHS issued the Nursing Home Standards Guide, which outlined 77 service standards related to health and safety. Over time, this guide evolved, and additional standards were incorporated. By 1974, a total of 90 standards were included, covering various aspects of health and safety. In 1977, the Health Care Financing Administration (HCFA) was established as a federal organization responsible for standardizing and certifying nursing home service quality. The HCFA commissioned the Institute of Medicine (IOM) to evaluate the standards in nursing home services. A significant reform in nursing home regulation occurred in 1987 with the passage of the Nursing Home Reform Act (OBRA-87). OBRA-87 introduced stricter inspections and further defined regulations for nursing home services, including nurse training, care standards, sanctions, and remedies. It also introduced the use of the Resident Assessment Instrument, with the Minimum Data Set being a major component widely utilized in nursing home research. In 2001, the Health Care Financing Administration (HCFA) changed its name to the Centers for Medicare and Medicaid Services (CMS).

In October 1998, CMS launched the Nursing Home Compare (NHC) system, which provided information on Medicare/Medicaid-certified nursing homes through an online report card format. Initially, the system included basic information about nursing homes and deficiencies related to health and safety identified during inspections, which is now known as Health Inspection. The Staffing measure was added to the system in June 2000, followed by the inclusion of Quality Measures in November 2002 (General Accounting Office [GAO], 2002). This is the early version of the 3-measure nursing home rating system being used today. The NHC report card system was influential as one of the first publicly available sources of standardized quality information on nursing homes. However, it faced challenges such as low consumer awareness, limited access (Stevenson, 2006), and difficulties in comprehending the information presented in the report card (Shugarman & Garland, 2006).

To address these issues, CMS introduced the current Nursing Home Compare system in December 2008. This reformed rating system retained the 3-measure framework of the previous report card system but utilized a 5-star scale for each of the three measures, significantly improving the system's usability. Currently, there are over 16,000 nursing homes in the United States providing care to more than 1.5 million residents. In 2012 alone, CMS allocated $140 billion to long-term services and support (Eiken et al., 2014). The data for the three domains, i.e., Health Inspection, Staffing, and Quality Measures (QM), is collected through different methods. Independent CMS-certified inspectors conduct health inspections, while nursing homes self-report the data for the other two domains (CMS, 2015a, 2015b). The health inspection evaluates various areas, such as medication management, nursing home administration, environment, food service, residents' rights, and quality of life. The Staffing domain is evaluated based on self-reported CMS Certification and Survey Provider Enhanced Reports (CASPER) staffing data, which reflects the average staffing level per resident day throughout a year. The quality measures domain rating incorporates 9 out of 18 quality measurement criteria derived from the MDS, and is reported quarterly, covering aspects of both long-stay and short-stay terms. The overall star rating is then calculated, taking the health inspection rating as the baseline, and adding 1 star for any self-reported domain with a 5-star rating or subtracting 1 star for any self-reported domain with a 1-star rating. Nursing homes that receive only 1 star in the health inspection can obtain a maximum of one additional star through self-reporting. The overall star rating cannot exceed 5 stars or fall below 1 star. An example illustrating a nursing home's rating yearly dynamics and the corresponding events is provided in Table 15.1 and Fig. 15.1.

USING BIG DATA ANALYTICS IN THE US NURSING HOME RATING INFLATION DETECTION

In this section, we showcase using big data analytics in rating inflation detection across nursing homes in California based on our previous research on this topic (Han et al., 2018, 2019). The two self-reported domains have the potential to significantly impact a nursing home's overall rating. This means that an average nursing home, initially receiving a 3-star rating in the health inspection, could potentially gain an additional two stars through self-reported measures and attain an excellent 5-star rating. Consequently, the overall rating can deviate significantly from the health inspection rating. To illustrate this, Fig. 15.2 demonstrates the shifts in ratings across different measures over a five-year period

Table 15.1 A nursing home's yearly rating dynamics

Month	*Health inspections*	*Staffing*	*Quality measures*	*Overall rating*
January	3	1	2	2
February	3	1	2	2
March	3	1	2	2
April	3	1	1	1
May	3	1	1	1
June	4	2	1	3
July	4	2	3	4
August	4	2	3	4
September	4	2	3	4
October	4	2	5	5
November	4	2	5	5
December	4	2	5	5

from 2009 to 2013. By design, the proportions of health inspection star ratings remain unchanged throughout the five-year period, as depicted in Fig. 15.2a. However, there has been a continuous increase in the number of nursing homes claiming high performance in the self-reported domains over this timeframe. Take the quality measures domain, for example. In 2009, around 30% of nursing homes self-reported a 4- or 5-star rating in the quality measures domain. This percentage increased to over 60% by 2013. Conversely, in 2009, over 20% of nursing homes self-reported a 1-star rating, but this figure dropped to less than 10% in 2013. We observe a similar trend in the staffing domain. As a result, the overall rating consistently skewed toward higher ratings over time. Figure 15.2d demonstrates that the proportion of nursing homes rated 4 or 5 stars increased from around 35–55% over the course of five years. The observations depicted in Fig. 15.2 can be interpreted in two contrasting ways. On the one hand, proponents may argue that the increased levels of self-reported measures genuinely reflect nursing homes' sincere efforts to continually enhance their services. They believe that these improved ratings are a testament to the commitment of nursing homes to provide better care. On the other hand, skeptics may assert that the enhanced ratings are not authentic but rather a result of nursing homes employing strategies to manipulate the system and artificially inflate their ratings. The inclusion of self-reported measures in the calculation of the overall rating introduces the potential

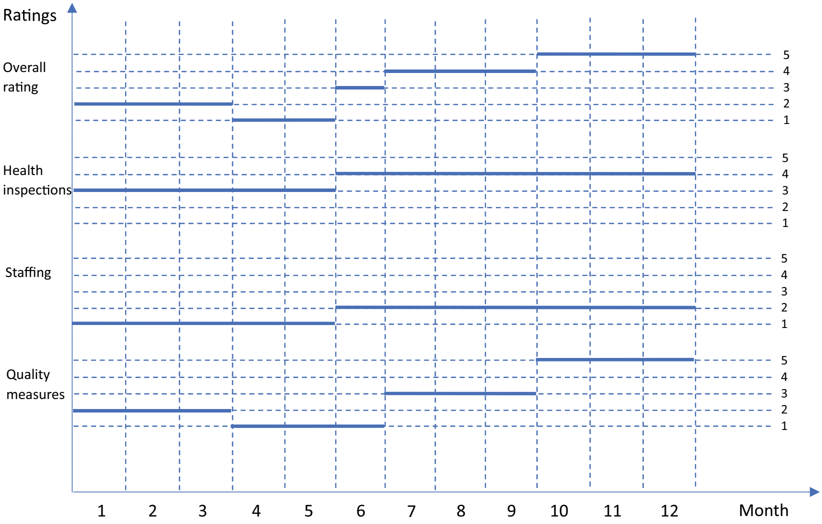

Fig. 15.1 A graphical representation of a nursing home's yearly rating dynamics (*Note* (1) New health inspection data is collected at the end of May, and the inspection rating increases from 3 to 4 stars. (2) Newly self-reported staffing data is added to the database together with the inspection data at the end of May, and the staffing rating increases to 2 stars from 1 star. (3) Quality measures data is self-reported quarterly. (4) The nursing home's overall rating is 2 stars from January to March due to a 1-star staffing rating. The overall rating further drops to 1 star in April and May since the self-reported measures are both 1 star. In June, the nursing home loses 1 star in its overall rating due to the low (1 star) QM rating. The nursing home's overall rating stays the same as its health inspection rating from July to September. The overall rating increases to 5 stars from October to December due to the high (5 stars) QM ratings)

for rating inflation. This raises the question of whether rating inflation truly exists and, if so, to what extent it occurs, and the way to identify those who engage in rating inflation. In the subsequent discussion, we aim to explore and provide insights into these questions.

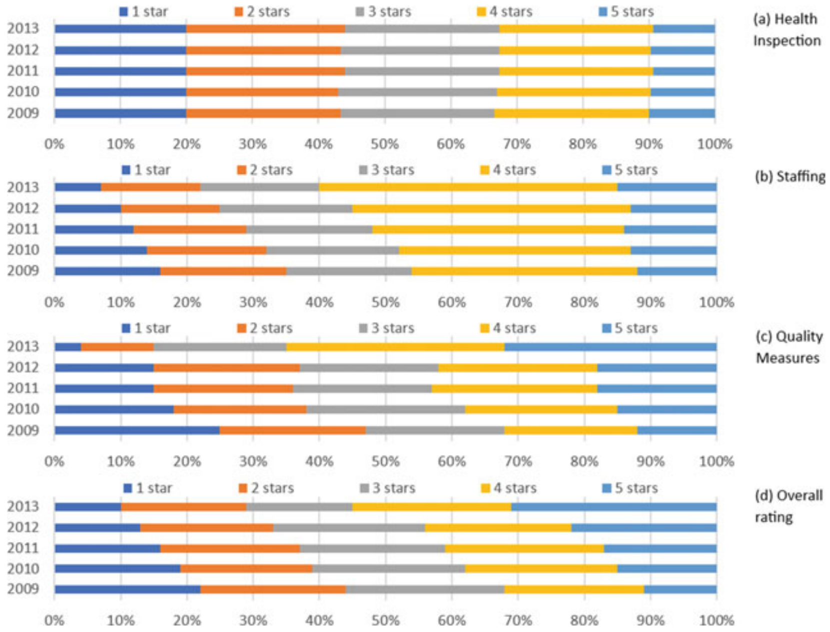

Fig. 15.2 Nursing home ratings from 2009 to 2013

Data Collection and Financial Incentive Analysis

Our analysis draws upon publicly available datasets from three primary sources: CMS, OSHPD, and CDPH. The CMS dataset provides comprehensive information on the performance of nursing homes, including detailed metrics for each criterion within the inspection, staffing, and quality measures domains. It also includes the corresponding star ratings for these domains as well as the overall star rating. Additionally, this dataset offers descriptive details about nursing homes, such as their location, size, certification, ownership information, and council type. The dataset encompasses records from 1219 nursing homes in California, spanning the initial five-year period since the implementation of the 5-star rating system (2009–2013). The OSHPD data comprises in-depth financial information specific to California nursing homes during the same time frame. This dataset categorizes nursing homes' sources of revenue, including Medicare, Medicaid, self-paying, managed care, and other revenue sources, and provides corresponding revenue and expense details for each category, allowing for easy calculation of profits. We also utilize the CDPH dataset, which contains detailed patient complaints. We employ these complaints as a proxy for assessing the service quality of nursing homes. It is important to note that the CDPH, operating at the state level, and the CMS, operating at the federal level, have distinct jurisdictions concerning nursing home inspections. As a result, the complaints captured in the CDPH dataset may not be included in CMS's star rating procedure, and the deficiencies identified in CMS's inspections may not necessarily result from CDPH complaints.

Our primary focus is on examining the changes in star ratings resulting from self-reported measures. To capture this change, our dependent variable, referred to as StarChange, is calculated as the difference between the overall rating and the health inspection rating. Given the nature of StarChange, which can only assume discrete values of 2, 1, 0, −1, and −2, we employ an ordinal logistic specification for our analysis. The value of StarChange for a specific nursing home i in a given year t is determined by a set of parameters, denoted as α_{-2}, α_{-1}, α_0, and α_1, which define the cutoff points for the five levels of StarChange. To model StarChange, we incorporate a vector of independent variables, denoted as $\boldsymbol{x}$, which includes the following factors: Incentive, BedCert, OccuRate, MarketShare, HHI, ForProfit, Medicare, Medicaid, CouRes, CouFam, PctgMedicare, PctgMedicaid, PctgSelfPay, PctgMGD, and Chain.

$$P\left(\text{StarChange}_{it} \leq j\right) = \frac{\exp\left(\alpha_j + \boldsymbol{x}'_{it}\boldsymbol{\beta}\right)}{1 + \exp\left(\alpha_j + \boldsymbol{x}'_{it}\boldsymbol{\beta}\right)}$$

In our model, we consider various independent variables, with particular emphasis on the nursing homes' financial incentive, denoted as Incentive. Incentive is defined as the difference in average per-patient profit, as presented in Table 15.2.

The capacity of each nursing home, measured by the number of certified beds, is represented by the variable BedCert. The occupancy rate of a nursing home, denoted by OccuRate, reflects the proportion of occupied beds and ranges from 0 to 1. Together, BedCert and OccuRate provide insight into the average number of residents in a nursing home. Given that nursing homes operate in different locations and face varying market conditions, we incorporate the variable MarketShare to

Table 15.2 Financial incentive calculation

a. Health inspection	*b. Expected profit per patient if overall rating stays the same as inspection*	*c. Maximum possible overall rating after self-reporting*	*d. Maximum expected profit per patient*	*e. Financial incentive (d − b)*
5	19.801	5	19.801	0
4	13.602	5	19.801	6.199
3	10.790	5	19.801	9.011
2	10.108	4	13.602	3.494
1	9.286	2	10.108	0.822

capture local market features. MarketShare signifies the market share of each nursing home within its specific Health Service Area (HSA). Additionally, we calculate the Herfindahl–Hirschman Index (HHI) based on the market share and include it in our model, which serves as an indicator of local market competition. The ownership type is denoted by the variable ForProfit, which takes a value of one if the nursing home is for-profit and zero otherwise. The variables Medicare and Medicaid indicate a nursing home's certification status. Medicare is assigned a value of one if the nursing home is Medicare certified, while Medicaid is assigned a value of one if the nursing home is Medicaid certified. Nursing homes are required by law to establish councils facilitated by residents or their family members. These councils play a crucial role in enhancing communication with staff and efficiently resolving issues. Given that the residential council and family council may function differently in addressing problems and handling complaints, we incorporate binary variables in our model. Specifically, ResCouncil denotes the presence of a residential council, while FamCouncil represents the existence of a family council. It is possible for a nursing home to have both types of councils. The OSHPD data classifies nursing home payers into five categories: Medicare, Medicaid, Self-Pay, Managed Care, and Others. To assess the impact of different payer percentages on nursing homes' star rating changes, we incorporate the percentage of each payer type. A subset of nursing homes operates under various chains. We introduce a binary variable, "chain," which is assigned a value of 1 if the nursing home operates as part of a chain and 0 if it operates independently.

To analyze the relationship between StarChange and the aforementioned variables, we employ logistic regression using various methods. Table 15.3 shows the estimates (numbers) and significance level (asterisks) for the three methods tested. The estimates show the expected change in log odds of star rating if the independent variables change per unit. The significance level shows the probability of rejecting the null hypothesis that the estimates equal zero given that they are nonzero. The significance level increases with the number of asterisks, with *** to be the highest. The estimation results for the pooled data are presented in the second column. To address potential endogeneity concerns, we incorporate nursing homes' fixed effects and perform a panel data regression, with the corresponding estimates shown in the next column. Some variables in our model, such as Medicare/Medicaid certification, remain time-invariant and cannot be directly evaluated using the fixed-effect method. To obtain coefficients for these time-invariant variables, we employ the Hausman-Taylor method, as illustrated in the last column. Across all tested methods, we consistently find that the main effect of Incentive is positive and statistically significant. This suggests that nursing homes with higher financial incentives are more likely to witness improvements in their star ratings after self-reporting.

Table 15.3 Financial incentive regression analysis

Variables	*Pooled data model*	*Fixed effect model*	*Housman-Taylor model*
Incentive	0.0325***	0.074***	0.074***
BedCert	0.000284	–	0.00162
OccuRate	−0.584***	0.627	0.445
ForProfit	−0.0128	–	−1.578***
Chain	−0.269***	0.0265	−0.444**
Medicare	−0.805***	–	−2.684***
Medicaid	−0.622***	–	−1.323*
CouRes	−0.231	–	−0.293
CouFam	−0.279***	–	−0.315
MarketShare	−6.79	−71.073*	−60.348*
HHI	0.020***	0.0777*	0.0781*
PctgMedicare	−2.283***	4.280***	4.242***
PctgMedicaid	−0.771***	1.610	1.819
PctgSelfPay	−0.861***	−4.851***	−4.447***
PctgMGD	−0.446	6.291***	6.386***

Inflation Detection

While covering different perspectives, interconnections among the three measures are expected (Castle, 2008; Harrington et al., 2000, 2012; Kim et al., 2009; Konetzka et al., 2004; Munroe, 1990; Zhang & Grabowski, 2004). For instance, urinary tract infection (UTI) is a common health issue prevalent among nursing home patients, and the percentage of UTI is a significant measure within the Quality Measures (QM) domain. Research has demonstrated that UTI is closely associated with catheter insertion (Gokula et al., 2004), which necessitates regular and timely care, thereby requiring an adequate level of staffing coverage. Furthermore, it has been identified that improper antibiotic usage is one of the primary causes of UTI, and the misuse of antibiotic agents is addressed in pharmacy service deficiencies, falling under the Health Inspection domain. Consequently, problems related to UTI are reflected across all three domains. Assuming no inflation and considering nursing homes' self-reported measures as legitimate, we would expect positive correlations between the two sets of ratings within the same year. Furthermore, if a nursing home genuinely endeavors to improve its quality of care, these efforts should have a lasting impact, resulting in better health inspection result in the following year. Consequently, a positive correlation would also be anticipated between the star ratings from the self-reported domains in one year and the health inspection ratings in the following year, as depicted in Fig. 15.3.

Figure 15.4 illustrates these two sets of correlations as described above. Upon examination, it is evident that within the same year, the correlation

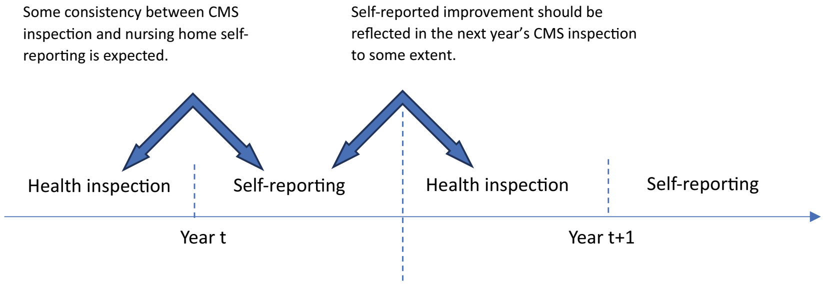

Fig. 15.3 Correlation analysis structure

between Health Inspection and Staffing is only 0.083, while the correlation between Health Inspection and Quality Measures is 0.153. This finding clearly demonstrates inconsistency between the health inspections and self-reported domains within the same year. In terms of consecutive years, the correlation between Staffing and the Health Inspection in the subsequent year is −0.094, while the correlation between Quality Measures and the Health Inspection in the following year is 0.078. These results indicate that self-claimed improvements in the quality measures and staffing domains do not have a lasting impact on the results of the subsequent year's health inspections. The correlation analysis provides initial evidence suggesting the presence of potential inflation, thereby triggering our further analysis.

To provide further evidence supporting the existence of rating inflation, we conducted additional analysis aimed at validating the consistency between the star ratings provided by the rating system and a quantifiable third-party proxy variable that serves as an independent measure of service quality. By comparing the results obtained from this proxy variable with the star ratings, we can assess the presence of significant inconsistencies. If such inconsistencies are observed, it raises doubts about the reliability of the star ratings and suggests the presence of rating inflation. Our analysis methodology involves leveraging the CDPH complaint data, which provides an independent dataset comprising patient complaints regarding nursing homes in California. By analyzing this data alongside the combined CMS, OSHPD, and CDPH dataset, which includes a total of 3850 records for California nursing homes over a five-year period,

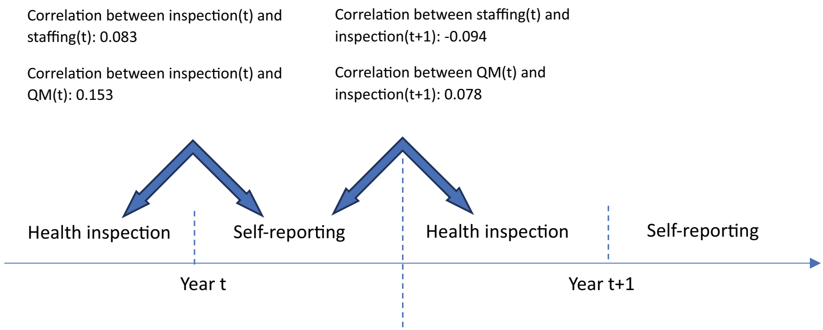

Fig. 15.4 Correlation analysis results

we aim to evaluate the presence of inflation. If inflation does not exist, we would expect the overall rating to align with true service quality, as reflected in the number of complaints. Specifically, nursing homes with the same overall rating should exhibit similar service qualities and similar numbers of complaints. Table 15.4 presents the average number of complaints for nursing homes categorized based on their health inspection and overall ratings. We normalize the number of complaints based on the size of each nursing home to make a fair comparison.

Table 15.4 presents a division of nursing homes into two distinct categories: those whose star ratings increased after self-reporting (upper right area) and those whose star ratings did not experience an increase following self-reporting (bottom left area). We then statistically compare the average number of complaints for each rating group by conducting an ANOVA analysis. The results of this analysis indicate that nursing homes with the same overall ratings but differing inspection ratings exhibit notable variations in their complaint distribution. Conversely, nursing homes with the same inspection ratings but different overall ratings demonstrate remarkable similarity in the number of complaints they receive. This analysis provides compelling evidence substantiating the presence of rating inflation within the context of self-reported measures.

Prediction Model

In this section, we develop a prediction model to evaluate the severeness of rating inflation. We utilize the overall star rating as the dependent variable, denoted as OverallRating. In view that the variable is ordinal and takes values in {1, 2, …, 5}, we employ an ordinal logistic regression model to analyze the relationship. The OverallRating is determined by a set of parameters γ_1, γ_2, γ_3, and γ_4, which set the cutoff points for the five-star ratings. The model can be represented as follows:

$$P\left(\text{OverallRating} \leq k\right) = \frac{\exp\left(\gamma_k + \boldsymbol{x}'\boldsymbol{\beta}_{\boldsymbol{P}}\right)}{1 + \exp\left(\gamma_k + \boldsymbol{x}'\boldsymbol{\beta}_{\boldsymbol{P}}\right)'}$$

where $k \in \{1, 2, 3, 4\}$. The independent variables, represented by the vector $\boldsymbol{x}$, consist of the same variables used in the financial incentive analysis equation. The coefficients of the prediction model are denoted as $\boldsymbol{\beta}_{\boldsymbol{P}}$.

Table 15.4 The average number of complaints for each rating level

Average number of complaints		*Overall rating*				
		1	*2*	*3*	*4*	*5*
Health inspection rating	1	6.505	6.909			
	2	5.946	5.687	6.210	8.251	
	3	4.366	4.676	4.860	5.597	4.288
	4		4.218	4.459	4.157	3.547
	5			9.473	2.517	2.921

To ensure an unbiased baseline, we strictly define the members of the honest group, guaranteeing that there is no evidence of inflation among these nursing homes. We establish the criteria for selecting honest nursing homes based on the following principles: (a) The overall star rating of the nursing home does not increase after self-reporting. (b) The number of patient complaints for the nursing home is significantly lower than the median value for its corresponding self-reporting level. Our rationale for selecting honest nursing homes is as follows: We identify two distinct types of inflators. The first type comprises nursing homes that inflate their self-reported measures with the aim of achieving higher ratings. For these inflators to be identified, it is necessary that they gain additional stars following self-reporting. By employing the first criterion, we exclude all nursing homes whose star rating increases after self-reporting, effectively excluding any inflators of this type. The second type of inflators encompasses nursing homes that inflate their self-reported measures to avoid losing stars. These nursing homes may have low staffing levels or quality measure scores that could result in a decrease in their overall ratings. In order to capture these inflators, our second criterion excludes nursing homes whose number of complaints exceeds the median value for their respective rating level. Based on these two criteria, we identify the honest group (H), which consists of 1262 nursing home records over a span of five years. The remaining 2588 nursing home records are classified as the potential inflator (PI) group.

We conducted an ordinal logistic regression on the sample of honest nursing homes (H group) to obtain unbiased estimates for each coefficient. Using the upper bounds of these unbiased coefficient estimates, we then predicted the highest possible rating for each nursing home within the potential inflator (PI) group. A nursing home is classified as an inflator if its actual overall star rating exceeds the highest possible rating predicted by our model. By applying a 95% confidence interval, we identified 147 records out of the 2588 nursing home records in the PI group (equivalent to 5.68%) as inflators. Furthermore, with a 90% confidence interval, we identified 219 records (8.46%) within the PI group as inflators.

Using Big Data Analytics in a Cross-Sectional Study of COVID-19 Infections Across California Nursing Homes

In this section, we showcase using big data analytics in COVID-19 infection analysis across California Nursing Homes based on our previous research on this topic (Gopal et al., 2021). Nursing homes have experienced significant impacts from the COVID-19 pandemic, primarily due to the advanced age and high prevalence of underlying health conditions among their residents (Arentz et al., 2020; McMichael et al., 2020). In Europe, nursing homes accounted for 57% of all COVID-19-related deaths (Comas-Herrera et al., 2020), while in the United States, nursing home residents and staff comprised 34% of all COVID-19 fatalities (Yourish et al., 2020). Consequently, effective infection prevention and control measures in nursing homes and long-term care facilities have become crucial in managing the epidemic (Adalja et al., 2020; Bedford et al., 2020). Given the significant variations in the prevalence and scale of COVID-19 outbreaks among nursing homes, our objective in this section is to explore the factors contributing to the susceptibility of certain nursing homes to COVID-19 outbreaks. Additionally, we aim to develop predictive models capable of identifying such nursing homes, enabling prioritized efforts for prevention and containment during future waves of the epidemic (Leung et al., 2020; Xu & Li, 2020).

Data Collection

We have collected data from various publicly available sources to conduct our analysis. The CMS data introduced in the previous section provides ratings and basic features on all nursing homes. On top of that, we also collected data from *The New York Times*, which provides aggregated data on COVID-19 cases per county (*The New York Times*, 2020). The California Department of Public Health (CDPH) also has supplied data specifically on the number of confirmed COVID-19 infections among staff and residents of nursing homes within the state (CDPH, 2020). To identify nursing homes with significant discrepancies between their self-reported measures and independent CMS inspections, we have employed the methods introduced in the previous section (Han et al., 2018). The scope of our study is limited to nursing homes within California. After cleaning and merging the aforementioned data sources, we have analyzed a final dataset comprising 713 nursing homes.

We have examined several outcomes, including whether a nursing home has reported at least one COVID-19 infection among its residents or staff, the number of confirmed COVID-19 infections among its residents, and the number of confirmed infections among its staff. Additionally, we have calculated a fourth outcome to identify large outbreaks, characterized by more than 10 infections among staff or residents. This threshold corresponds to approximately the 95th percentile of the number of infected staff and the 75th percentile of the number of infected residents. The independent variables in our analysis encompass the severity of the COVID-19 outbreak in the surrounding area of a nursing home, its governance characteristics, as well as its ratings in terms of quality, staffing, and CMS inspections.

Model Description and Results

We develop a Zero Inflated Bivariate Poisson (ZIBP) regression model to identify factors contributing to the susceptibility of nursing homes to COVID-19 outbreaks. This model enables us to examine the impact of nursing homes' ratings, governance features, and their surrounding environment on both the likelihood and size of COVID-19 outbreaks. The econometric details of the model can be found in Walhin (2001). In our approach, we assume that the count of infected staff and residents contains zero values either because the nursing home was located in an area with a lower COVID-19 infection rate or because it successfully implemented preventive measures to protect its staff and residents. Additionally, our model accounts for the interdependency between the number of infected staff and residents within a nursing home since they can infect each other and are subject to common infection prevention and control policies. By considering this interdependency, we mitigate concerns about omitted variables in our analysis. As a sensitivity analysis, we also present the results of a zero-inflated double Poisson regression model, which assumes independence between the counts of infections among staff and residents. To identify nursing homes with the highest risk of COVID-19 outbreaks, we utilize our models to predict the probability of experiencing an infection. We compare the performance of our models with commonly used machine learning techniques, specifically Neural Networks (NN) and Support Vector Machine with Radial Basis

Function kernel (SVM-RBF). Furthermore, we assess the effectiveness of our models in predicting nursing homes at the highest risk of experiencing large outbreaks, defined as those with more than 10 infections.

Our study sample consisted of 713 nursing homes in California. As of May 1, 2020, 23% of the nursing homes in the study sample had reported at least one COVID-19 infection among either their staff or residents. Among those, 31% experienced large outbreaks with more than 10 infections among either their staff or residents.

Table 15.5 shows the estimates (numbers) and significance level (asterisks) for the two models tested. The estimates show the expected change in log odds of having at least one COVID-19 infection if the independent variables change per unit. The significance level shows the probability of rejecting the null hypothesis that the estimates equal zero given that they are nonzero. The significance level increases with the number of asterisks, with *** to be the highest. The two models are tested separately for staff level and resident level infections, and then for the nursing home level with both staff and resident included. We observe that the number of infections among both staff and residents increases with the size of the nursing home. However, these infections are not associated with the rate of infections per 100,000 residents in the county where the nursing home is located. This suggests that while a higher severity of the COVID-19 epidemic in the surrounding area increases the likelihood of experiencing at least one infection in nursing homes, it may not necessarily lead to larger outbreaks. Interestingly, for-profit nursing homes have a significantly higher expected number of infected residents compared to non-profit ones, but the number of infected staff in for-profit nursing homes is not statistically different. Previous empirical research has consistently shown that for-profit nursing homes exhibit inferior care quality in various aspects (Amirkhanyan et al., 2008; Comondore et al., 2009; Harrington et al., 2001; Hillmer et al., 2005). Furthermore, a higher occupancy rate is associated with a lower number of infections among staff. Specifically, a one percent increase in occupancy rate decreases the expected count of infections among staff by 2.4%. Among the three different ratings, an increase of one unit in the CMS-reported health inspection rating is linked to an 18% decrease in the expected number of infections among both staff and residents. Similarly, a one-unit improvement in staffing rating is associated with a 23% decrease in the number of infections among residents. This finding suggests that higher staff-to-resident ratios and a greater number of staff per resident enable nursing homes to effectively control infections among their residents. However, contrary to expectations, an increase of one unit in self-reported quality ratings is associated with a 51% increase in infections among staff and a 14% increase in infections among residents. This aligns with the growing body of research indicating that nursing homes tend to embellish their self-reported quality ratings, and thus, these ratings may not always reflect better quality of care for residents (Fuller et al., 2019; Han et al., 2018; Johari et al., 2018; Neuman et al., 2014; Sanghavi et al., 2020). Finally, our inflation-score variable measures the discrepancy between self-reported and CMS-reported ratings. A higher discrepancy indicates a greater likelihood of nursing homes overstating their quality measures. With a one-unit increase in this discrepancy, the expected number of infections among staff and residents increases by 52% and 14%, respectively.

Rating System Improvement

CMS has the opportunity to address these discrepancies and enhance the reporting process by implementing improved inspection and auditing strategies (Han et al., 2019). Figure 15.5 illustrates the potential impact on the number of infections among staff and residents if the self-reported quality measures by nursing homes accurately reflected their quality of care.

Considering the significance of ratings for nursing homes (Werner et al., 2016), a reliable rating system with no discrepancies between self- and CMS-reported measures would incentivize nursing homes to strive for higher ratings through genuine improvements in their quality of care. As depicted in Fig. 15.5a, under an enhanced rating system, a lower number of predicted infections among staff would be more prevalent. The average number of predicted infections among staff would decrease from 1.85 to 1.52, resulting in a 17.6% reduction in total infections across the staff of all nursing homes. Similarly, Fig. 15.5b demonstrates the impact on nursing home residents. If self-reported quality ratings truly reflected the quality of care, the expected number of infections among residents would decrease from 8.67 to 8.15, corresponding to a 5.8% reduction in total infections across the residents of all nursing homes. Our findings also reveal a substantial covariance estimate of 0.68, indicating a significant dependency between the number of infected staff and the number of infected residents. This empirical observation confirms our expectation

Table 15.5 Effect of variables on the size of COVID-19 outbreaks

		Zero inflated bivariate Poisson model	*Zero inflated double Poisson model*
Nursing home level	County infections per 100K	0.01***	0.01***
	For profit	−0.3	−0.27
	Family council	0.15	0.21
	Certified beds	0.01**	0.01**
	Occupancy rate	−0.18	−0.98
	Inspection rating	−0.02	−0.02
	Quality rating	−0.14	−0.13
	Staffing rating	0.01	−0.01
	Inflation score	0.05	0.06
Staffing level	County infections per 100K	−0.01	−0.01
	For profit	−0.27	−0.16
	Family council	−0.06	0.19
	Certified beds	0.01***	0.01*
	Occupancy rate	−2.42**	−1.11
	Inspection rating	−0.2*	−0.16*
	Quality rating	0.41**	0.33***
	Staffing rating	0.11	0.25***
	Inflation score	0.42***	0.27***
Residents level	County infections per 100K	−0.01***	−0.01***
	For profit	2.57***	1.88***
	Family council	0.07	0.1
	Certified beds	0.01*	0.01
	Occupancy rate	−0.25	−0.15
	Inspection rating	−0.2***	−0.2***
	Quality rating	0.13**	0.15***
	Staffing rating	−0.26***	−0.2***
	Inflation score	0.13***	0.11***

that there is a correlation between the count of infections among staff and residents in nursing homes. It is understandable as nursing staff and residents are in close proximity, and once infections occur within one group, it becomes challenging to prevent the spread to the other group.

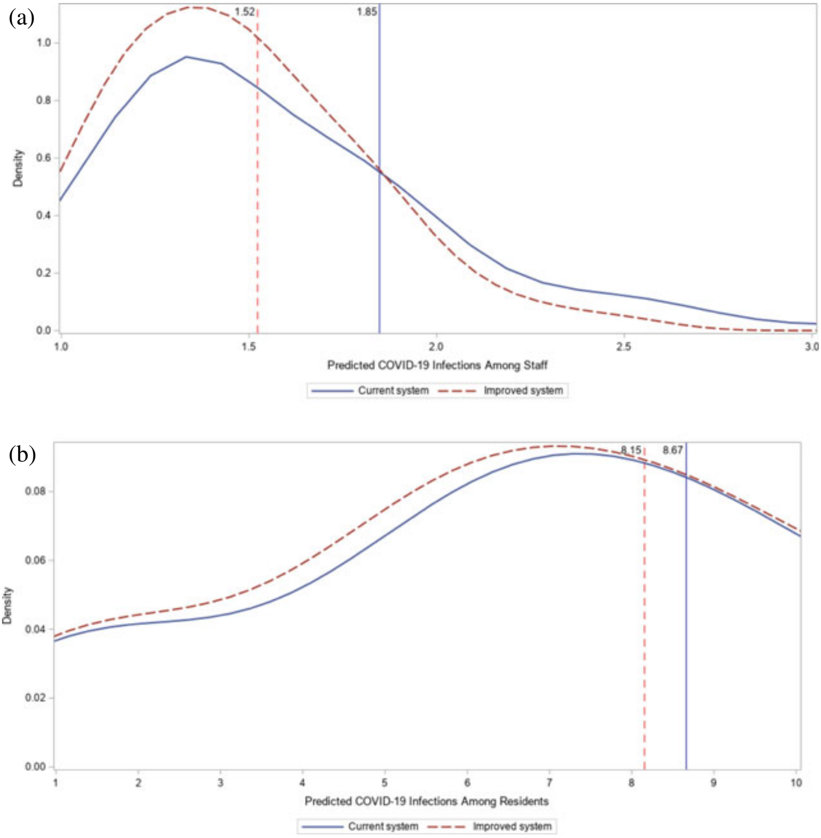

Fig. 15.5 Performance difference between the current system and the improved system (*Note* This figure was initially reported in our earlier research [Gopal et al., 2021])

Prediction Model

In data analytics, a lift chart is a widely used tool to evaluate the effectiveness of models by comparing the model's performance with that of random selection. In Fig. 15.6, we present the lift chart for the ZIBP model and compare it with two common machine learning models, Neural Network (NN) and Support Vector Machine (SVM) with RBF kernel. The chart also includes a zoomed-in view of the first 50 nursing

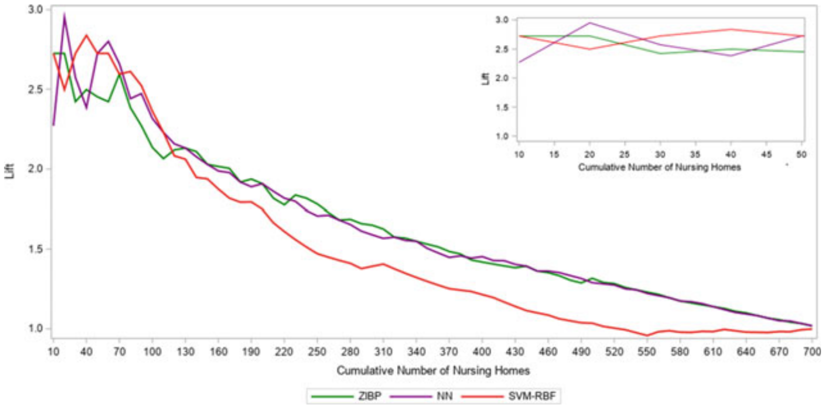

Fig. 15.6 Performance comparison between ZIBP and machine learning models (NN and SVM-RBF) (*Note* (a) The curves show the performance of ZIBP and common machine learning models on predicting the occurrence of at least one COVID-19 infection. (b) This figure was initially reported in our earlier research [Gopal et al., 2021])

homes in the top right corner. The performance of the ZIBP model is comparable to that of the NN and SVM-RBF models. For the first 50 nursing homes, the ZIBP model demonstrates a true positive rate that is 2.45–2.73 times higher than that of a random selection model.

Figure 15.7 focuses on the ZIBP model's ability to identify nursing homes with large COVID-19 outbreaks among those with at least ten confirmed infections. For the first 50 nursing homes, the ZIBP model outperforms a random selection model by correctly identifying nursing homes with large outbreaks among staff at a rate 1.3–3.9 times higher. Similarly, the ZIBP model shows a 1.5–2.1 times better performance than a random selection model in predicting large outbreaks among residents in the same group.

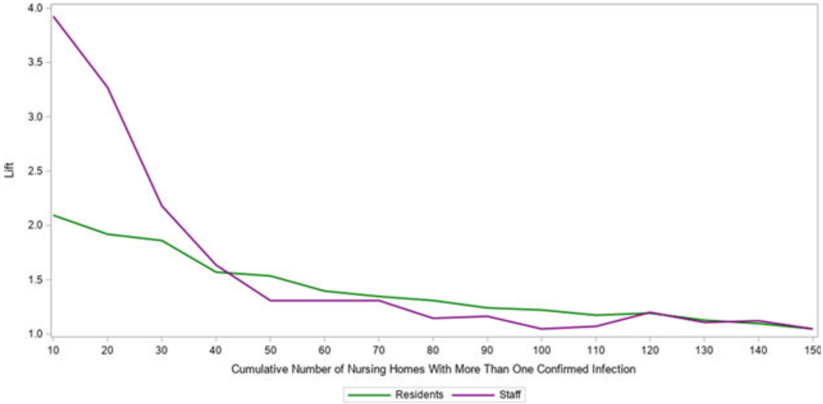

Fig. 15.7 Performance of ZIBP model for predicting large outbreaks among residents and staff (*Note* (a) The curves show the performance of ZIBP on predicting the occurrence of large COVID-19 outbreaks with more than 10 infections. (b) This figure was initially reported in our earlier research [Gopal et al., 2021])

CONCLUSION AND IMPLICATIONS FOR PRACTICE

The healthcare industry experiences an enormous influx of data in diverse formats each day, creating a daunting task for healthcare professionals to analyze and derive valuable insights. The advent of big data analytics provides a transformative solution for healthcare organizations to effectively harness this data deluge. Big data analytics empowers healthcare organizations to seamlessly integrate heterogeneous data sources, ensuring the management and control of data quality. By leveraging advanced analytics techniques, these organizations can perform comprehensive data analysis, uncovering valuable knowledge from the results obtained. This capability of big data analytics holds immense potential for driving meaningful advancements in the healthcare industry. The showcased applications in this chapter serve as compelling evidence of the potential of big data analytics, illuminating its role in revealing hidden insights and addressing critical challenges within the healthcare domain.

While big data analytics holds promise for effective data-driven decision-making in healthcare settings, healthcare managers should be mindful of several challenges associated with its application. Below, we outline three major challenges:

> ***Extensive data cleaning***: Healthcare data is sourced from various providers, some of which may lack robust data governance procedures. To leverage data analytics models effectively, the data must be cleaned and transformed into precise and accurate formats. However, for healthcare professionals, the task of merging, cleaning, and selecting relevant information from diverse sources can be arduous and time-consuming. For example, in the rating inflation detection case, we had to merge data from three different sources and meticulously analyze hundreds of columns to identify useful variables for our analysis.
>
> ***Data sensitivity***: A significant portion of healthcare data contains sensitive patient information, necessitating careful handling to ensure privacy protection. Privacy concerns must be adequately addressed before applying any data analytics techniques. Unauthorized disclosure of private information can have severe consequences for healthcare organizations and is both unethical and illegal in many jurisdictions. In certain scenarios, additional privacy protection measures may limit the analysis that data professionals can perform. Overcoming these challenges requires creativity. For instance, in our COVID-19 infection case, we encountered challenges where only ranges of infection numbers were provided instead of exact values due to privacy concerns. This compelled us to categorize the data appropriately for analysis and apply suitable data analytics models.
>
> ***Data security***: Healthcare professionals face ongoing challenges related to data security. Healthcare data is susceptible to security breaches and data hacking, necessitating continuous monitoring and robust security measures. Safeguarding patient data is of paramount importance to protect confidentiality and maintain trust.

Addressing these challenges is crucial to harnessing the benefits of big data analytics in healthcare while ensuring the privacy, security, and accuracy of the data. Healthcare managers and data professionals must work together to navigate these obstacles and develop strategies that prioritize data integrity, privacy, and security in order to derive meaningful insights and make informed decisions.

In the coming years, the adoption of big data analytics is expected to grow exponentially. Consequently, healthcare organizations must proactively establish the necessary infrastructure and allocate resources to effectively leverage these techniques. Big data analytics has the potential to drive revenue growth and enhance care quality by facilitating data-driven decision-making within healthcare organizations. Its application is paramount for fostering a sustainable healthcare system. The effectiveness of big data analytics is immense, but it relies on healthcare professionals equipped with the requisite knowledge and experience to navigate and harness its power. By empowering skilled professionals and embracing the potential of big data analytics, healthcare organizations can unlock transformative insights and drive positive outcomes for patients and the industry as a whole.

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PART IV

Practitioner Perspective

CHAPTER 16

Acting Our Way into New Ways of Knowing: Some Concluding Reflections from a Practitioner's Perspective

Helen Bevan

INTRODUCTION

The 15 preceding chapters in this book offer a depth and breadth of wisdom that is highly relevant to those of us in the health and care practitioner community and to the issues and priorities that challenge us daily. The book demonstrates that, when it comes to practice-based approaches to research in health and care system change, Warwick Business School is an active and abundant centre of interdisciplinary learning. And, as any effective process of inquiry should, from a practitioner perspective these chapters create as many questions as they provide answers.

As demonstrated throughout this book, the term 'practitioner' covers a wide range of people in health and care. Across its chapters we meet

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multiple kinds of clinical practitioners, leadership and management practitioners, people who practise commissioning of health and care and change, and innovation and improvement practitioners, of which I am one. What all practitioners have in common is that we practise: we undertake actions, routines or conventions on a daily basis in real time, and we seek to get better at what we do whilst helping others to do the same (Bevan, 2023). In a practice context, people typically cannot just 'know their way' into new ways of acting by reading research findings, book chapters and other forms of codified or explicit knowledge. Practitioners primarily need to 'act their way' into new ways of knowing, through experimentation, collaboration and learning within their own professional environments. The chapters by Burgess, Grove, Croft et al., Radaelli, Nicolini et al. and Bharatan et al. all reinforce this point. At the same time, the interjection of new knowledge is critical for practitioners. In a fast-moving, complex world, we need to be able to rethink our assumptions and unlearn things that might not work as well for us anymore (Grant, 2021).

What we see in many of the case studies in the preceding chapters is organisational life as it is experienced every day by practitioners: complex and hard to measure, control or standardise, rather than life that is ordered and predictable. The change approaches that we adopt as practitioners need to match the complexity or dynamism of the situation (Rowland et al., 2023). Attempting change in a complex environment (with multiple players who operate independently of each other, where change is hard to predict or plan for), is very different from trying to change things in a straightforward, linear environment (where cause and effect is largely known or can be discovered through analysis) (Nason, 2017).

So, what are some of the key themes across the various chapters of this book that offer guideposts for practitioners aiming to act our way into new realms of knowing? Inspired by the scholarly content of this book, I have identified three actionable themes, linked to complex systems, that I hope will resonate with fellow practitioners:

1. Working with paradox, polarity and opposable thinking as a core leadership role.
2. Acknowledging and building different forms of knowledge for better outcomes.

3. Creating ‘Trojan mice’ rather than ‘Trojan horses’ for change in the health and care system.

These are listed as discrete themes but all three are interconnected and interdependent with each other.

Theme 1: Working with Paradox, Polarity and Opposable Thinking as a Core Leadership Role

A thread that weaves through every chapter in the book is the need for practitioners to balance seemingly opposing needs, views or priorities. This challenge has various labels in the research literature and practitioner guidance, such as paradox (Miron-Spektor et al., 2022), polarities (Johnson, 2005) and opposable thinking (Boston and Ellis, 2019). Hamel and Zanini (2020: 215) describe it thus:

> Scientists who embrace the conflict between opposing theoretical frameworks have the chance to discover new and deeper truths. Jurists (and parents) that navigate adroitly between mercy and justice are more humane and effective. Political systems that resist ideological fractures are better at crafting effective policies. Mastering paradox is equally vital for our organisations.

Table 16.1 shows examples of paradoxes, polarities or opposable thinking that are present in each of the chapters of the book. All the scenarios described in the chapters represent tough, complex decisions for practitioners: situations where there is no ‘right’ answer and where they need to hold multiple positions at the same time, often in conflict or tension with each other.

In sum, the chapters of this book suggest that, as practitioners in an increasingly complex world, we need to develop greater skills that help us embrace paradox and polarities.

CoCreative (2023) defines polarities as the deepest level of collaboration for systems change. When people who have different views or values become aware of the polarity beneath their ‘either/or’ or ‘you are wrong and I am right’ thinking, and can instead adopt a ‘both-and’ approach, in which it is possible for people with opposing needs or views to both ‘be right’ in a range of different contexts, then they can use the difference to advantage to design better outcomes.

Table 16.1 Identifying paradoxes, polarities and opposable thinking across all chapters

Title/author(s)	*An example of paradox/polarity/ opposable thinking in this chapter*
Integrated and networked healthcare systems: the Canadian example Trish Reay	Systems with clear delineating boundaries vs. working beyond boundaries
Partnership for improvement: How a leadership compact fostered relational change between five hospital chief executives and their regulator Nicola Burgess	Commitment to a shared purpose vs. compliance with regulatory processes
Micro-clinical cultures, group mindlines and evidence-based practice Amy Grove	Adherence to evidence-based guidelines vs. the use of "mindlines" and tacit knowledge
Patient and public involvement and engagement (PPIE) for enhancing absorptive capacity (ACAP) in pursuit of sustainable healthcare Charlotte Croft, Graeme Currie, Tina Kiefer	Tacit knowledge ('lay expertise') vs. evidence-based practice
How to develop inclusive, sustainable leadership in nursing? Clean the sticky floor! Charlotte Croft and Altricia Dawson	Develop the individual leader vs. change the structural system
The practices and processes of strategic leadership Sarah Woolley and Graeme Currie	Functional specialism vs collective leadership role
The role of staff managers in integrated care: variety and disparity as key resources to appeal to clinical professionals Giovanni Radaelli	The expert power of clinical leaders vs. the collaborative power of staff managers
Leadership for innovation in the English NHS: Insights from policy, academia and practice Gary Kerridge, Dimitrios Spyridonidis and Penny Kechagioglou	Structure and mechanisms vs. culture and agency
Quantifying financial impact of quality improvement programmes: lessons and limitations Bernard Crump	Aim to improve quality/reduce adverse events vs. aim to demonstrate financial impact
The role of quality improvement in sustaining healthcare during crisis Altricia Dawson, Nicola Burgess and Agnieszka Latuszynska	Wholesale standardisation of work vs. the need to improvise quickly in a given context

(continued)

Table 16.1 (continued)

Title/author(s)	*An example of paradox/polarity/ opposable thinking in this chapter*
From evidence use to evidencing work: Towards a processual view of the role of evidence in commissioning policymaking Davide Nicolini, Ila Bharatan, Emmanouil Gkeredakis, Rachel Manning and Jacky Swan	Etic vs. emic: universal guidelines vs. local evidentiary information
Advances in behavioural science to support patient and carer self-management Isabel Ding and Ivo Vlaev	'Nudges' for individuals vs. whole system action
Values alignment in sustaining health-care innovation processes Ila Bharatan, Katey Logan, Rachel Manning and Jacky Swan	Pre-existing values and ways of working vs. new mindsets to drive new practice
Using big data science for sustainable healthcare: managing the interface of care homes and healthcare providers Xu Han, Niam Yaraghi and Ram Gopal	Big data to drive revenue growth vs. big data to improve quality of care

In thinking about practitioner capabilities for the future, we need to build awareness of the central role of paradoxes and contradictions in complex change and promote 'paradoxical leadership'—the ability to simultaneously hold seemingly opposing attitudes and motivations, and to be able to move effortlessly between them as circumstances demand. We need to able to reframe seemingly different views as contradictions and tensions and to understand the interdependence between the views/ values we hold: "We need to work with BOTH universal guidelines AND local evidentiary information: how can we design a solution that maximises both of these for better outcomes?".

This is not the same as achieving consensus; rather, it is being able to accept both the inevitability and benefit of disagreement in managing situations that are paradoxical (Perera & Bevan, 2022).

Theme 2: Acknowledging and Building Different Forms of Knowledge for Better Outcomes

Another theme that runs through the book is the nature of knowledge. How do practitioners know what to do? Multiple authors in this book discuss the importance of tacit knowledge—intuitive knowledge and know-how—in practitioner decision-making. Burgess (Chapter 3) emphasises the role of frequent face-to-face dialogue for tacit knowledge exchange. Grove (Chapter 4) concludes that formal codified knowledge, such as that in clinical guidelines, appears to play only a small part in orthopaedic decision-making: the tacit knowledge gained through clinical subcultures plays a much more significant role. Croft et al. (Chapter 5) define 'evidence-based' as not only referring to traditional evidence produced through clinical research, but also to experiential knowledge held by clinicians and the knowledge via experience that patients and their carers possess. Radaelli (Chapter 8) observes how 'staff' managers use their tacit knowledge about organisational processes and frameworks, to add value to doctors' decision-making. Nicolini et al. (Chapter 12) describe how evidence is 'assembled' locally through a negotiated social process, incorporating both formal and tacit contextual knowledge.

These insights suggest that, as practitioners, we might need to shift our knowledge focus from 'best' practices to 'emergent' practices (Hansen, 2023). The idea that we can identify knowledge of the 'one best way' of working or operating might be applicable in a health and care system that is linear and predictable. However, our world of practice, as shown in these chapters, is mostly complex and undetermined. This type of knowledge is not easily discoverable, codifiable or replicable between contexts. As much as 80% of the knowledge in an organisation may be tacit and undocumented, and can only be accessed through networks, communities of practice and sharing conversations (Milton, 2021). As the chapter from Croft et al. demonstrates, the tacit knowledge that contributes to improvements in health and care doesn't just come from practitioners but from the people with lived experience who use services and need to be at the heart of the knowledge system. Tacit knowledge is the most valuable kind of knowledge for innovation and improvement, and breakthroughs are most likely to come because of it rather than through formal evidence (Hu et al., 2023).

If, as practitioners, we followed the spirit and emphasis of the knowledge themes in this book to build our 'Potential Absorptive Capacity', i.e. the ability to acquire and assimilate knowledge (Croft et al., Chapter 5), what might we do?

We might develop knowledge systems that hold the tension/paradox between codification-centric and personalisation-centric knowledge strategies (Moorhouse, 2018). A codification-centric strategy is focused on linking people to evidence and sources of formal knowledge. It means investing in research forums, metadata, knowledge taxonomies, 'good practice' databases, repositories and search systems. A personalisation-centric strategy is primarily concerned with linking people to people, creating the 'space' for knowledge exchange to spontaneously arise, and thereby enable learning, reflection, re-design and new forms of emergence. That means designing time and space into organisational processes and routines, through networks, communities, summits, learning debriefs, peer-assists, virtual platforms and huddles. If we want people in our organisations to utilise knowledge for innovation and improvement on a large and systematic scale, we need to work with the tension inherent within both kinds of knowledge systems.

Finally, how do we as practitioners act our way into new ways of knowing (or activate our 'potential absorptive capacity' for knowledge as Croft et al., Chapter 5, describe)? And how do we shift from a view of evidence as an entity per se, to evidencing as the process of giving evidential value to information that is used by practitioners within the context of decision-making? (A question asked by Nicolini et al., Chapter 12). My response is that to create the conditions for continuous discovery—evidencing, absorption, application and testing of knowledge—we need to build deliberate learning systems for health and care.

A learning healthcare system is defined as a health system in which outcomes and experience are continually improved by applying science, informatics, incentives and culture to generate and use knowledge in the delivery of care. It can also improve value, reduce unjustified variation, support research and enhance workforce education, training and performance (Foley et al., 2021). The system that is needed to innovate, improve and learn across an organisation is different from that required to cascade information up and down the hierarchy; a learning system enables everyone, at every level, to be an active learner. A learning system helps practitioners to tackle complex problems in a systematic way, involving those closest to the issue in discovering and testing new ideas, and measuring improvement of the system over time (Bohmer et al., 2020; Shah, 2021). Effective learning systems can hold the paradox between individual and collective learning. As well as enabling individuals to learn, they create team learning, including the process of collective inquiry, dialogue and co-production with people who use services. They expand the problem-solving and knowledge-sharing capacity of the organisation by providing access to insights, information and expertise across different levels and groups (Sampath et al., 2021).

Many of the chapters in this book point in a direction that leads to learning systems as an enabler for realising the potential of knowledge for improvement. I describe a specific aspect of a learning system in the next section of this chapter.

Theme 3: Creating 'Trojan Mice' Rather Than 'Trojan Horses' for Change in the Health and Care System

Many of the authors in this book paint a picture of how change unfolds in health and care organisations and/or they offer advice on creating the conditions for change. They describe a process involving multiple kinds of practitioners, playing different roles, with change being enacted at many levels simultaneously.

Kerridge et al. (Chapter 9) describe the need for more distributed models of leadership. They argue that leadership development frameworks should focus less on the competencies of individual leaders, and more on how to create, build and sustain capacity and capability for leadership, innovation and leadership of cultural change across organisations and systems. They call for a shift in the policy discourse from solutions based on changing structures or culture, to a focus on agency. In my blog for BMJ Leader with Göran Henriks, we describe agency as *"the power and ability to make choices and act on them freely"* (Bevan and Henriks, 2022). We distinguish between two types of agency: individual and collective. Individual agency refers to individuals generating more power and control in their own lives through organisational status or credibility, activation, shared decision-making and/or self-care. Collective agency occurs when people act together, united by a common purpose, harnessing the power and influence of the group and building mutual trust. Aligned to Kerridge et al. (Chapter 9), both kinds of agency are essential ingredients in the leadership of change equation.

Bharatan et al. (Chapter 14) describe how the innovations that spread best are typically not large-scale, top-down, cascaded initiatives, but smaller-scale changes that fit with the pre-existing values, ways of organising, and working practices of a specific group. Radaelli (Chapter 8) talks about the role of staff managers, such as quality, operations and innovation managers in bringing skills in improvement methods such as Lean, Six Sigma or theory of constraints to aid clinically led pathway improvement projects. The chapter describes how these managers became ‘diplomats’ in creating shared purpose between different groups of clinicians working on the same projects. They were able to build strong relationships with influential clinicians that took the change agenda forward through many small wins rather than big gestures. Dawson et al. (Chapter 11) describe how five hospital systems were able to rapidly change their practices in response to the pandemic because they had already created an explicit improvement infrastructure and a connected learning system for improvement. Pre-pandemic, they had invested in improvement capability at multiple levels of the system and built-in time, space, routines and practices to align everyday improvement activity to organisational strategy. The hospitals were able to manage the paradoxical tension between the need to both innovate with new practices radically and quickly AND to standardise new practices.

Collectively, these descriptions match the characteristics of ‘Trojan mice’, a concept I learnt about a decade ago from Chris Bolton (summarised in Bolton, 2020). In situations of uncertainty and unpredictability (as in most of the case studies in this book), practitioners cannot be certain about cause and effect as we implement change; the system continues to constantly change as we interact with it. It means that programmatic approaches based on an implementation plan and adherence to project management principles are unlikely to deliver all the changes required in the way that is anticipated.

The most effective way to improve a complex system is by experimenting in many small ways with approaches that are safe to fail but designed to teach us what may work within a specific context (Hansen, 2023). Having many people across the system who have the skills and agency to test out small, well-focused changes to address complex problems (Trojan mice) nearly always works better than large pilot and roll out projects (Trojan horses). Trojan mice tenaciously work to improve things, incrementally and continuously (Blanes, 2019).

> Trojan mice… are small, well focused changes, which are introduced on an ongoing basis in an inconspicuous way. They are small enough to be understood and owned by all concerned but their effects can be far-reaching.

> Collectively a few Trojan mice will change more than one Trojan horse ever could. (Jarche, 2012)

To create a system of Trojan mice is to create an organisational capability to run small tests of change rather than working through large-scale pilots. As Mahendra (2016) describes it: *to build something that isn't necessarily grand, but rather light, lean and quick—experiments that we can send off nimbly through the gates and learn from, regardless of what returns.*

Having a strategy based on lots of small-scale experimentation (and therefore many small losses) takes much of the risk out of innovation. The more Trojan mice that are deployed, the more capability, data for improvement, dispersed leadership and agency we are likely to get.

So how do we deploy more Trojan mice? First, creating Trojan mice is a deliberate leadership strategy to build the capacity for experimentation with multiple small-scale changes enacted within a large-scale framework (Bevan and Henriks, 2021). It needs an organisational culture that embraces the learning that comes from failure and making it feel psychologically safe for frontline teams to experiment and fail. This requires an investment in capability for experimentation and improvement at every level of the system.

A Trojan mice strategy needs to work with, not against, the prevailing culture, values and working practices of the team and the organisation. People need to feel that change is being done 'with' them and 'by' them, not 'to' or 'for' them (Russell, 2019). The Trojan mice need to be able to experiment in small teams, where they are more likely to disrupt current ways of thinking with new ideas, inventions and opportunities than if they worked in large teams. If we move people who are highly innovative in a small team into a larger team, they often lose their ability to be disruptive innovators (Wang and Evans, 2019).

A key part of building teams of Trojan mice is to create a sense of belonging so that everyone is seen and valued for their own unique and authentic selves. To quote Rowland and Pivcevic (2022), people need to feel secure, included and part of something significant. If we feel we belong, loyalty follows, and with that the permission for risk-taking and innovation.

Here are four specific roles for senior leaders in building a Trojan mice implementation strategy:

1. Role model a high tolerance for failure through practical experiments (Farson and Keyes, 2002).
2. Demonstrate that experimentation and learning is a core part of everyone's role: *"In healthcare everyone has two jobs: to do your work and to improve it"* (Batalden and Davidoff, 2007).
3. Make sure that the work of Trojan mice teams is followed up organisationally, so that the teams can see a patient-centred benefit to the work they are undertaking.
4. Manage the tension of the paradox between experimentation and productivity (Taylor, 2017). The values of innovation (openness, diversity, experimentation, play) are typically different to the values of productivity (excellence, precision, standardisation, delivery). Trojan mice need to be supported to exist in both worlds simultaneously.

The Trojan mice philosophy enables practitioners to 'act our way' into new ways of knowing, through experimentation, collaboration and learning within our own contexts. Investing in Trojan mice is about building the kind of learning system that not only enables us as practitioners to continuously improve our work, but for our organisations to achieve their goals as well.

Conclusion

The environment described in the previous parts of this book is not an easy or comfortable one for practitioners. Futurists focus on the growth of anxiety amongst the practitioner community (Cascio, 2020) and we see that reflected in some of the chapters. Responding to the many tensions, polarities and uncertainties in this environment (and fear that the choices we make might be the wrong ones) can create much worry and unease. Surviving and thriving in the world described in these chapters requires letting go of certainties, empathising with others, fostering collaborative intelligence and experimentation linked to a greater appetite for risk, shedding preconceived hypotheses and seeking to create the conditions that enable others to achieve their goals.

The chapters in this book are a call to action for the practitioner world. They provide encouragement to build a culture of collaboration aimed at increasing empathy, understanding, discovery and communication amongst diverse individuals, teams, organisations and systems. In an environment where it is increasingly difficult to discern the big picture, we need to exploit the opportunities of big data and data science to increase deep understanding.

I look forward to this brave new world. One where we, as practitioners, will consistently act our way into new ways of knowing in our daily work, supported by active and relevant research alliances that challenge our thinking and practice and steer us towards new awareness and understanding that mean better outcomes for the people we exist to serve.

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