Chapter 6
Understanding the Resilience of Health Systems

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List of Abbreviations

HSA   Health System Assessment
UHC   Universal Health Coverage
MIPEX   Migration Integration Policy Index
UNISDR   United Nations System for Disaster Risk Reduction
EU   European Union
UNRWA   United Nations Relief and Works Agency for Palestine Refugees in the Near East
MHPSS   Mental health and psychosocial support

Introduction

Migration and Health Systems

Globally, displacement is now at the highest level ever recorded. The number of people forcibly displaced by the end of 2016 had risen to a staggering 68.5 million (UNHCR 2018a). Violence, poor economic conditions and political instability have been the main drivers for mobility towards Europe in the recent decade, producing new challenges for national health systems in the Middle East and Europe.

The 2008 World Health Assembly on Migration Health (WHO 2008) highlighted four important issues. Two of them concerned the capacity of national health

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systems to guarantee access to basic health services for migrants. Practical translation of this implies two key components: (1) development of migrant-sensitive health systems that deliver sufficient services in an inclusive and coordinated manner and (2) support for the creation of health-focused alliances throughout the pathway of the migration process.

However, little information is available on how health systems should adapt and transform themselves to ensure that migrants can actually benefit from basic health services in countries they cross or in countries where they seek asylum. There is wider acknowledgment that the political and social integration of migrants—as well as their inclusion in health systems' Universal Health Coverage (UHC) agenda—particularly affects care experiences and eventually health outcomes (Ager and Strang 2008; Giannoni et al. 2016; Ben Farhat et al. 2018).

In many ways, exploring UHC and migration is about investigating how national health systems can maintain their initial functions while accommodating additional groups of populations who have specific needs and perceptions of healthcare. This dynamic adaptive capacity has been described by some as the resilience of health systems (Folke et al. 2002). Reflecting on the resilience of health systems in the context of migration and health is about challenging perspectives that only view migrants through a global health security lens (see also Chap. 7 "Health Security in the Context of Forced Migration"). Building the resilience of health systems is not therefore about migrants, the "others", but about our own health systems, the foundational values they represent and how health systems can adapt to a changing and future environment.

What Is the Relevance of Resilience for Health Systems Today?

Despite its use across a wide range of disciplines and contexts (including psychology, engineering and environmental science), "resilience" has emerged as a key concept in global health systems research only in the 2010s. The term gained substantive popularity from 2014 and 2015 due to the onset of the Ebola outbreak in West Africa (Kieny et al. 2014; Nam and Blanchet 2014) and has recently gained even further traction due to the Syrian crisis and associated regional instability and displacement in the Middle East and Europe.

There is wide consensus that the global community has to help build more resilient health systems. But do we really know what resilience means, and do we all have the same vision of resilience? Does resilience mean different things to different people, or is it simply a new term replacing previous buzzwords such as "health systems strengthening" or sustainability?

Most definitions of health system resilience have their foundations in the field of environmental science where system resilience is the result of interactions between the human sphere and ecosystems and describes a system's ability to be self-organising, learn and adapt. In health systems research, many definitions focus on the absorptive capacity of the system to resist a one-off event and return to a state of

equilibrium (ICRC 2004; Albanese et al. 2008; Tadele et al. 2009; Agani et al. 2010; DFID 2011). The capacity of a health system to learn through experiencing shocks is present in health systems literature (Almedom and Tumwine 2008; Levine and Mosel 2014) but does not have the same importance as it has gained in ecology (Walker et al. 2002; Folke et al. 2005).

Managing resilience is viewed as consisting both in building the configurations of the health system and creating a warning system for the internal and external factors that can affect the structure and functions of the health system. Actors, social networks and institutions manage the resilience of health systems. There is broad consensus in the literature on the importance of change and transformation as an integral part of resilience (Thomas et al. 2013). The degree of change that a health system needs to introduce depends on the scale and intensity of the shock (Hyder et al. 2007). Whatever the degree of intensity, resilience will enable absorption and adaptation to the shock or transformation of the health system.

In the context of health systems research, resilience has thus been used in at least three different ways: (1) thinking about the building blocks of health systems and addressing those elements that are missing or strengthening the components that are weaker; (2) focusing on the enabling institutional environment within which health systems operate and pushing for reforms that might enhance their resilience; and (3) focusing on the organic and systemic properties of health systems which liken health systems to ecological systems and focusing on what might be described as "system stewardship".

The concept of resilience of systems, as defined by the authors of the chapter, is grounded in a view that sees the world as a set of dynamic and interactive systems that operate far from equilibrium. With the emergence of system thinking and complexity science, the world is now described as a network of systems interacting with each other and influencing different levels of society (Blanchet and James 2013; Berkes et al. 2003; Ramalingam 2013). Dynamic systems of different sizes interact across multiple scales (Kieny et al. 2014; O'Neill et al. 1989; Wilbanks and Kates 1999) and affect systems' ability to respond to shocks and stressors of diverse nature, frequency and intensity (Janssen et al. 2006).

Resilience is seen as a "boundary term" (Scoones 2007) that is at the crossroad between politics and science (Gieryn 1999). As such, it may have the function of building political consensus and aligning and enabling the coexistence of several different agendas (Wilson 1992). This can go some way to explaining why the term resilience may remain contested and ambiguous: so as to preserve multiple interpretations from a wide range of stakeholders, from politicians and policymakers, scientists, health service managers or community members. However, it remains important for health systems researchers and practitioners to clarify the meaning of the concept and have common guidance as to its use.

The present chapter offers reflections and a new conceptual framework based on system thinking and complexity theories (Plsek and Greenhalgh 2001; de Savigny and Adam 2009). This chapter also offers examples from resilience-focused migration and health challenges and policies in order to illustrate the utility of the conceptual framework. Through this chapter, we will explore the concept of resilience and

how this concept has evolved over time. We will also explore how resilience has been translated into indexes and measures. We reflect on how resilience is relevant for European and neighbouring health systems faced by population flows and conflict. Finally, we make recommendations for a new research agenda.

Towards a New Conceptual Framework

Framework

While definitions between fields of study do not necessarily share the same perspective of resilience, there are common elements in theoretical models of system resilience (Castleden et al. 2011). For example, in the field of health sciences, resilience is often defined as the capacity of individuals, communities, systems and institutions to anticipate, withstand and/or judiciously engage with catastrophic events and/or experiences (Almedom and Tumwine 2008). Drawing on the resilience literature (Carpenter et al. 2001; Holling 2001), it is important to both define what resilience is, in specific contexts, and explain how it can be managed in those contexts.

We propose a new conceptual framework adapted from environmental studies (Lebel et al. 2006) to help analyse the various definitions of health systems resilience, and with a firm grounding in complex systems sciences. In this framework, resilience of health systems is characterised by four main dimensions: (1) capacity to collect, integrate and analyse different forms of *knowledge* and information; (2) ability to anticipate and cope with *uncertainties* and surprises; (3) capacity to manage *interdependence*, to engage effectively with and handle multiple- and cross-scale dynamics and feedbacks; and finally (4) capacity to build or develop *legitimate* institutions that are socially accepted and contextually adapted.

Based on frameworks used in ecology, three levels of resilience can be applied to health systems: absorptive capacity, adaptive capacity and transformative capacity. Within health systems thinking, the absorptive capacity relates to the capacity of a health system to continue to deliver the same level (quantity, quality, and equity) of basic healthcare services and protection to populations, especially vulnerable groups (including migrant populations), despite shocks (Adger et al. 2003). Adaptive capacity is the capacity of the health system actors to deliver the same level of healthcare services with fewer resources or a different combination of resources (Walker et al. 2002; Folke et al. 2002; Thomas et al. 2013). Finally, the transformative capacity describes the ability of health system actors to transform the functions and structure of the health system to respond to a changing environment (Olsson et al. 2006; Castleden et al. 2011; Lebel et al. 2005).

Figure 6.1 illustrates the various resilience capacities and the resilience of health systems. The potential value of this framework is that it integrates all of the different approaches to resilience—the building blocks, the systemic properties and the enabling institutional environment—into one single approach for use by researchers, practitioners and policymakers. Each dimension is described here.
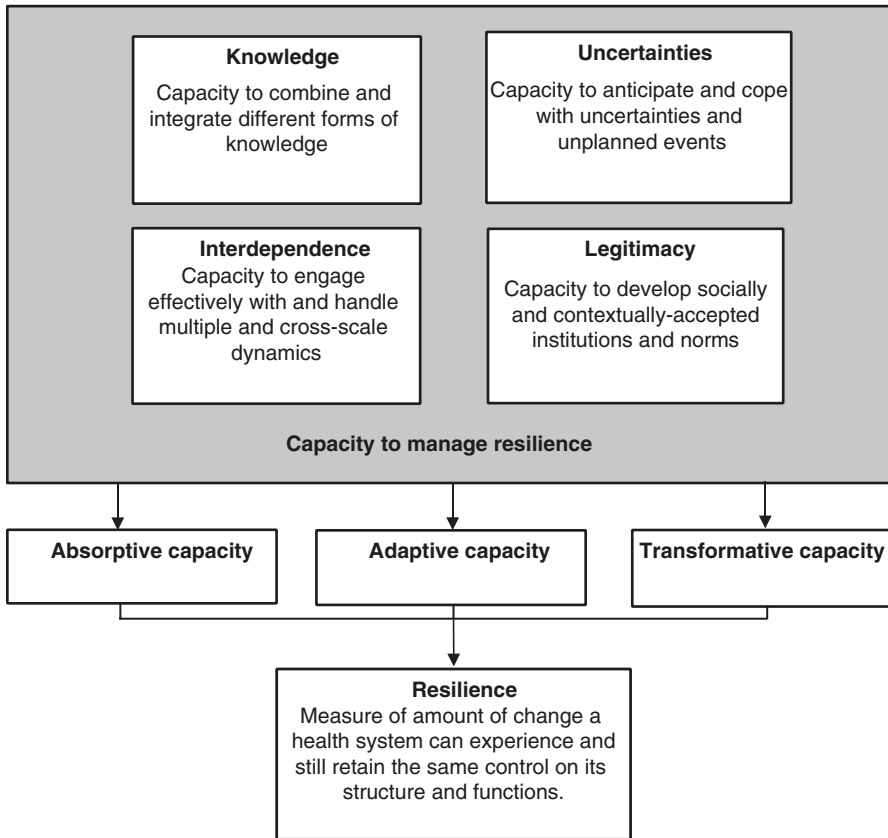
Fig. 6.1 A conceptual framework: the dimensions of resilience management (adapted from Lebel et al. 2006)

Knowledge: Capacity to Combine and Integrate Different Forms of Knowledge

The knowledge that needs to be collected and processed to ensure health system functioning and resilience is wide. For example, health systems planners need to understand current resources available, where gaps in resources exist or where weaknesses in the health system lie. But they also need to understand the current health status of the population and their health priorities. Furthermore, beyond the health system, planners need to be able to monitor risks and threats to individual and population health and the health system, which can sometimes relate to the economic sphere or the political context. In other words, the type of information necessary to make the right decisions to ensure functioning and resilience needs to

combine a range of known and potential factors, including public health data collected through, for example, the surveillance system, information about the state of the current health system, the nature and intensity of potential or actual shocks affecting the health system and served population and information about potential solutions and innovations that could be accessible to health systems managers (see also Chap. 9 "Evidence on Health Records for Migrants and Refugees: Findings from a Systematic Review").

Decision-making is a daily task for health service managers who are confronted with the difficulty of anticipating shocks and stresses, which are often unpredictable, and the challenge of responding to disruptive events quickly (Streefland 1995; Senge et al. 2004). Even well documented, evidence-based data cannot influence the decisions of an individual if the decision in conformity with that evidence represents a threat to his/her own interests and survival (e.g. professional career, family situation or life-threatening situation) (Nulden 1996). Ajzen and Madden (1986) added a third type of decision-making process, emotion and factual cognition, which has to do with the impact of action following the decision. According to the authors, managers are very concerned both about whether the action has a chance of working and whether individuals belonging to their social network (particularly those who may bear an influence on the individual's status) will criticise or praise their decision and action. In other words, decision-making processes are complex, combine rational and non-rational behaviours and are influenced by individuals' interests and the opinions of peers who are part of the same social network.

Scholars have found that there is a relationship between the structure of networks, the type of links between actors (i.e. the degree of bonding between actors of the system or bridging links with other systems) and the resilience of social-ecological systems (Burt 2003; Newman and Dale 2005). The capacity to engage with a diversity of actors belonging to various spheres of society has been extensively documented in social network analysis, which highlighted the role of social brokers, i.e. individuals who create links between users and researchers (Borgatti et al. 2009). The brokers in a health system help coordinate actors in times of crises or shocks and build bridges between different groups within the system (Burt 2003; Newman and Dale 2005).

Uncertainties: Capacity to Anticipate and Cope with Uncertainties and Unplanned Events

Resilience can be understood in terms of adaptability of health systems (Carpenter et al. 2001; Walker et al. 2002; Blanchet et al. 2014). Adaptability is the capacity of the actors in a system to respond to stresses and shocks (Westley et al. 2006). Because human actions dominate social-ecological systems, the adaptability of such systems is mainly a function of the actions and decisions taken by individuals,

networks and groups managing these systems (Gunderson and Holling 2002; Berkes et al. 2003) and their perception of risks (Slovic 2000). Managing uncertainties and risks relates to the combination of two different organisational and individual capacities: collecting information about the nature and scale of the risk and, from the individual perspective and emotional sphere, about how individuals evaluate these risks (Kasperson et al. 1988). For example, in the case of migration and disease control, anticipating public health outbreaks requires a functional disease surveillance system to inform health service managers on the occurrence of outbreaks and the state of transmission of the disease (Rojek et al. 2018; Moon et al. 2015). Using complex adaptive systems analysis, MacKenzie et al. (2015) showed that the capacity of the health system in Northern Nigeria to adapt to an outbreak required not only a capacity to operate all six building blocks of the health system but also access to flexible resources (e.g. human resources, vehicles, laboratory capacities, drugs and supplies) to respond to unexpected shocks, such as outbreaks. However, the surveillance of contextual factors required to support preparedness goes beyond public health and requires monitoring of external factors that can affect the resilience of health systems: e.g. price of oil, security status in the country, likelihood of natural disasters (Blanchet et al. 2014; Permanand et al. 2016; Rosenkotter et al. 2014). Analysing contextual factors and translating them into health systems terms require the combination of various methodologies and techniques (e.g. systems dynamics, process mapping, social network analysis, scenario technique, cynefin) that all derive from system thinking, recognising the importance of feedback loops and process contexts (de Savigny et al. 2017).

Interdependence: Capacity to Engage Effectively with and Handle Multiple and Wide-Ranging Dynamics

Recognising that health systems are embedded within other complex structures (e.g. political, economic, judiciary, social and ecological systems) alludes to how health systems are affected by factors which may not seem to be directly linked to public health. In the policy context, this was described by Blanchet et al. (2014) who showed that the structure of the physical rehabilitation system in Somaliland was transformed following changes in national security and international donors' strategies. The degree to which health systems are influenced by non-health systems is often all too apparent when health systems are not resilient. For example, the inadequate capacity of fragile health systems underpinned the challenges in responding to the Ebola outbreak, in countries afflicted by decades of conflict, weak economies and entrenched poverty (McPake et al. 2015). Building resilience in the wake of Ebola will need to take all of these factors into account: not treating the crisis solely as a medical emergency but as a profound and long-term failure of economic and social development (Ramalingam 2013).

Legitimacy: Capacity to Develop Socially Accepted and Contextually Adapted Institutions and Norms

Another important component of resilient health systems in the literature relates to the necessity of community trust and ownership. This can be built through an inclusive consultation process engaging communities meaningfully as the users of the health system in the development of policies and management of healthcare services where patients are placed at the centre of the system (Gilson 2005; Wilkinson and Leach 2015). Importantly, person-centred management of health systems needs to happen at every level. Kieny and Dovlo (2015) showed that responding to the Ebola outbreak requires trust and accountability to exist or be built at every level of the health system: from the patient to the community health worker and nurses at the health centre to medical and managerial staff at higher level. This person-centred management is led by accountability and transparency principles.

The Ebola outbreak has demonstrated the importance of building a trusting relationship with populations, to mitigate the situation where communities avoid using health facilities for fear of contamination (UNFPA and Options 2015). The violence against healthcare workers also showed the disconnect between communities and health services (Delamou et al. 2015; Raven et al. 2018). Bloom et al. (2007) further discussed the necessity to build social and health institutions that are recognised as legitimate by communities.

Applications of Health System Resilience

Health Systems Assessment

Linked to the Sustainable Development Goals, there is a shared international commitment to leave no one behind and reduce population risks and vulnerabilities. Building on major global processes, including the 2030 Agenda for Sustainable Development, the World Humanitarian Summit, the New York Declaration and the twin resolutions on Sustaining Peace, new working methods across the humanitarian, development and peace nexus are recognised as imperative.

The UHC2030 working groups on Health Systems Assessment (HSA) and Health Systems in Fragile States have recommended approaches to better assess health systems' performance and inform the health system strengthening interventions to be implemented. These could be applied to any health system and any context. They include:

1. Joint analysis and assessment between all actors (government and civil society, national and external actors), which requires a concerted investment in consistent and sound joint situation and contexts analysis to establish a joint problem statement and shared understanding of priorities based on reliable data as well as the capacities available to address them.

2. Joint planning, which will ensure complementarity of approaches and programmatic activities that will help minimise gaps in the response and increase possibilities of collective efforts towards shared goals.
3. Collective outcomes are at the centre of the commitment to leave no one behind, as it serves to transcend longstanding conventional thinking, silos, mandates and other obstacles.
4. Coordination structures are to be developed that are outcome-based and that bring together emergency and development partners.

A sound analysis of the context, focused on the determinants of the problems, its historical evolution, the constraints posed and the opportunities offered, should be at the basis of any engagement. With regard to the joint analysis for the health system, this should bring together the findings from a health risk analysis, country capacity assessment for preparedness and response as well as HSAs.

Based on the HSA, planning and decisions by national and international actors can be made on an essential package of services, financing, supply management, task allocation among health workforce, etc., in order to ensure, for example, that access to basic health services for migrants is guaranteed. Such HSA is also needed to avoid undermining or fragmenting the national health system (Blanchet et al. 2016). Furthermore, HSAs can also help understand the capacity of essential public health functions and how preparedness functions can be strengthened in such contexts (Rojek et al. 2018).

Taking into account the dynamic characteristics of population displacement, the HSA needs to be done within a relatively short time frame and remain an organic information tool that is regularly updated when there are dramatic changes in the context. The HSA is considered as the first step to guide national, international and local authorities making decisions on allocation of resources and priority setting. As illustrated by country profiles produced by the European Observatory on Health Systems and Policies, the national HSA is structured around the health system foundations and takes into account cross-cutting aspects such as the role of the private sector and civil society, access to health services for minorities. It also includes an analysis and prioritisation of health system bottlenecks that need to be addressed to increase access, coverage, quality and scope of an essential package of quality health services, including the content and implementation modalities of such package of services. With the recent migration in Europe, a full assessment section should be added on displacement and cross-border activities. One way of synthesizing health systems capacities is to use indices.

Use of Resilience Indices

There is a wide range of indicators and indices relating to the governance of countries, their capacity to innovate and change or their capacity of coping with disasters. However, none of them measures the resilience of health systems. There is a need to combine the information gathered by some of the indices to provide infor-

mation on the general context where health systems operate. Similar exercises could be tested in Europe in order to analyse the capacities of health systems to integrate migrants and asylum seekers into their national health system. Like every index exercise, such initiative will need to be agile and repeated at least every year in order to have any value for decision-makers. Finally, we will need to invest time to create consensus on the indicators that will need to be measured to assess the resilience of health systems and on how such an index could inform local and international planning and action. Kruk et al. (2017), for example, propose a health system-specific resilience index. However, further efforts will need to be invested in order to create consensus on the exact indicators that will need to be measured to assess the resilience of health systems and on how such index could inform local and international planning and action (Ridde et al. 2019).

Measuring resilience through a set of indicators has been widely developed in various ways. They may be called resilience, fragility or readiness indices. Without being exhaustive, we illustrate how these indices are used. In terms of migration in Europe, we suggest to use resilience indices in combination with the Migrant Integration Policy Index (MIPEX). First launched in 2004, the MIPEX is a set of 167 policy indicators that provide a picture on the level of efforts in each EU country on integration of migrants. In terms of resilience index, much can be learned from the humanitarian sector. For example, DARA, an independent think tank, has established an index to measure the quality of the institutional and governance framework in relation to countries' capacity to reduce risk (DARA 2018). Perhaps unsurprisingly, their analysis shows that the bottom six countries (Afghanistan, Chad, Haiti, Somalia, Democratic Republic of Congo and Somalia) are low-income countries that have recently experienced conflict or political crises and despite their very high level of vulnerability to a range of extreme physical events, they have very weak capacity to address the drivers of risk. Similarly, UNISDR has concluded that improving governance is the single most important priority for reducing risk (UNISDR 2015). The Caribbean Catastrophic Risk Insurance Facility (CCRIF) is the world's first regional fund to use parametric insurance to give governments access to low-price earthquake and hurricane catastrophe coverage (CCRIF 2015). With standard insurance approaches, detailed assessments of losses have to be carried out before a payment is made. With parametric insurance, loss is calculated by using a resilience index in which hazard levels—wind, storm surge and waves for hurricane, ground shaking for earthquake—are used as an advance proxy for losses. In the private sector, again, KPMG has developed a Change Readiness Index that is updated every year and classifies countries using indicators grouped looking at the capacities of three different groups of actors: enterprise capability, government capability and civil society capability (KPMG 2018). Somalia, Syria, Chad, Sudan and South Sudan are at the very bottom of the 2017 raking. In the humanitarian sector, the INFORM index identifies countries at risk of humanitarian crisis and disaster. The INFORM index analyses three areas of risk: hazards and exposure, vulnerability and lack of coping capacity (Marin-Ferrer et al. 2017). The index is extensively used by international donors and United Nations agencies.

Migration, Health Systems and Resilience

Recent global events, including the conflicts in Syria and Yemen, have put considerable pressure not only on local and regional health systems but also on countries viewed as potential routes of access and/or promising places of future settlement. Since 2014, more than 1.8 million migrants entered the European continent via Spain, Greece or Italy (Da Rold 2018) with many of them pursuing onward journeys to Germany (Wetzke et al. 2018). Newspaper articles across the European Union report that further inflows of migrants are likely, reinforcing existing worries relating to the health states of those newly arriving and the potential burdens they may place on national systems.

However, despite high political and social importance, research on the effects of migration on EU countries and national health systems responses/adaptations is still in its infancy. Despite this, we note clear synergies between recommendations in this literature and the wider resilience discourses and examples presented in this chapter. Existing literature draws attention to the scale of the shock Western countries experienced during initial waves of migration and settlement between 2012 and 2014 (Wetzke et al. 2018). At this time, national systems were seen as ill-prepared to deal with the complex interacting needs of asylum seekers, including psychological (e.g. being affected by post-traumatic stress disorder), physical (e.g. being a survivor of gender-based violence or of torture) as well as sociolegal needs (e.g. arriving in a country with no legal recourse to legal advice, minimal protection from repatriation) (Rojek et al. 2018; Ben Farhat et al. 2018; Juul Bjertrup et al. 2018).

Available literature highlights how important it was and is for systems to leverage accurate knowledge of target populations, their needs and expectations, as well as secure their engagement in processes of care access and uptake in line with resilience thinking. For example, Wetzke et al. (2018) highlighted the critical role that health services play in the first weeks in refugees settling in new environments. In their study on a 2015 cohort settling in Germany, they noted that health service utilisation was particularly high in first weeks of camp residence (on average 37.1 visits per 100,000 persons); a steady decline was then evident: at 6 weeks of camp inhabitancy, only 9.5 visits occurred per 100,000 persons. Accurate understanding of migrant needs and level of integration—including by age group and taking into account tailoring of services to individual histories and experiences of violence, neglect and medical needs—is critical to meeting migrant health needs. This has been similarly emphasised in the United Kingdom, where Campos-Matos et al. (2016) report Public Health England leading the revision of guidelines for pre-entry health assessment to ensure collaboration with humanitarian agents, migrant specialists and NHS and local authorities (see also Chap. 10 "Assessing the Health of Persons Experiencing Forced Migration: Current Practices for Health Service Organisations").

Similarly, we note calls in the literature for more nuanced and legitimising approaches to migrant service delivery. For example, Grotti et al. (2018) draw atten-

tion to the wider discourses on migration—where migrants are viewed as vulnerable populations, often discussed in contexts of limited agency—and how such discourses further reinforce gendered and paternalistic service delivery. While migrant women are vulnerable due to their journey and personal experiences, they are then further constructed as vulnerable by health systems and providers that are meant to address their needs in a new alien environment. Given care services are already overstretched and fragile, this additional labelling may prompt women to seek help informally in their own communities.

Most refugees and migrants are managed within their countries and regions, and there is a growing body of work understanding how these health systems manage the chronic and acute stresses of conflict and population displacement and how this can illuminate strategies to support resilience (Campos-Matos et al. 2016), as illustrated by the following examples on the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA).

UNRWA is responsible for the delivery of key services such as education and social support for Palestine refugees. As part of its mandate, the organisation offers health services via a network of primary care facilities and ensures access to advanced care via referral. Since 2011, UNRWA health systems in Syria, Lebanon and Jordan have had had to address various challenges due to the Syria conflict.

A collaborative research project between UNRWA, the American University of Beirut and Queen Margaret University, Edinburgh, explored this issue through 97 in-depth interviews, 3 group model building workshops with 46 UNRWA professionals and development of 3 systems dynamics simulation models.

The research indicated that UNRWA health systems have broadly maintained trends in utilisation and delivery of key services by deploying absorptive, adaptive and transformative capacities in their response to the Syria crisis and associated displacement. Key examples of this include:

Absorption: UNRWA reform packages—such as the introduction of an electronic record and queuing system—have assisted clinics in Jordan in managing the increased patient load. Reform packages had successfully been integrated into routine practice by 2012 (peak of the displacement period) and thus assisted health professionals in managing utilisation at their clinics.

UNRWA Syria: Operating in settings of active conflict	UNRWA Lebanon: Operating in a displacement setting	UNRWA Jordan: Operating in a displacement setting
• Approximately 50% of 500,000 Palestine refugees have been internally displaced • Increases in war-related injuries and trauma have been recorded.	• Approximately 32,000 Palestine refugees from Syria have been displaced to Lebanon • UNRWA systems are required to meet the needs of a 10-15% increase in covered population	• Approximately 15,000 Palestine refugees from Syria have been displaced to Jordan • UNRWA systems are required to meet the needs of a 1-2% increase in covered population

Fig. 6.2 Challenges encountered by UNRWA health systems in Syria, Lebanon and Jordan

Adaptation: In response to increased and overwhelming utilisation of UNRWA primary care clinics in Lebanon, area and clinic managers were supported by increased devolution of resources, which supported their implementation of innovative solutions. New clinical teams were hired to address the increase in utilisation, and, as needed, new health delivery points were opened in camps experiencing conflict between newly arriving and settled refugees. To address service delivery challenges to the most politically vulnerable Palestine refugees, UNRWA has also engaged in advocacy with national health authorities in order to broker access to much needed secondary care.

Transformation: In Syria, the crisis affected not only communities but also healthcare staff residing in the country. To address the mental health stressors placed on staff, as well as strengthen their wellbeing and in turn staff capacity to respond to the needs of patients, mental health and psychosocial support training was introduced. The training covered both manager- and peer-support mechanisms for enhancing staff wellbeing as well as the introduction of services for patients. Similar trainings have been rolled out in Lebanon and Jordan and are now part of UNRWA's routine service offer.

The empirical case studies from Syria, Lebanon and Jordan suggest that adopting a complex and dynamic systems lens is critical in identifying and exploring resilience (Alameddine et al. 2018). We identified distinct resilience capacities (absorption, adaptation and transformation) and wider organisation and systems elements sustaining them (see Fig. 6.3). Notably, we highlight that both system hardware (e.g. availability of resources) and software (e.g. a culture of learning)
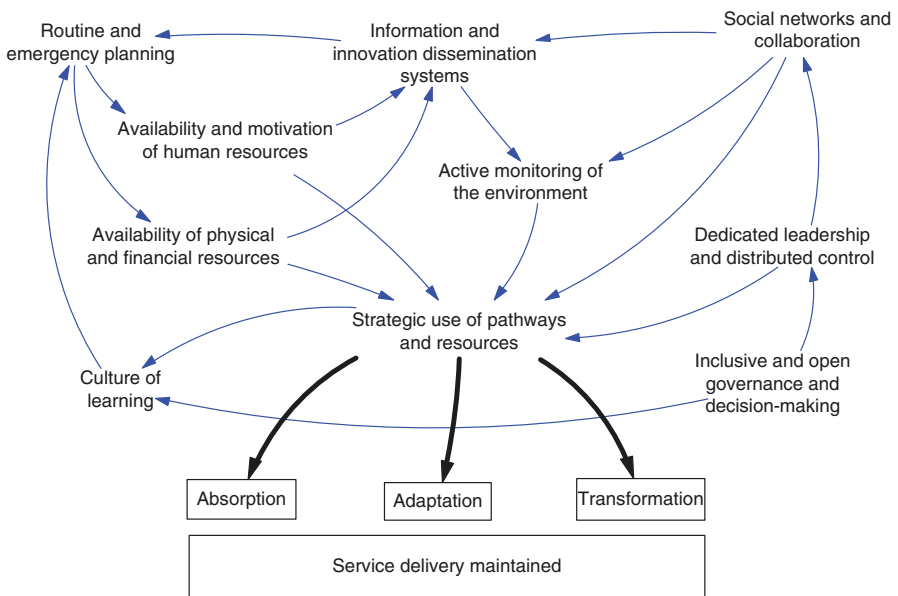
Fig. 6.3 UNRWA systems elements sustaining resilience capacities and service delivery

play a role in deploying resilience. While the former are clearly necessary for systems to function, the latter are particularly important in ensuring health systems and organisations deploy their resources strategically and make "resilient" decisions.

A second illustration on migration in Europe comes from our resilience analysis based on the paper published by Kotsiou et al. (2018). The Greek healthcare system has faced two severe shocks which have now transitioned to becoming chronic stressors. The first concerns the economic crisis and its effects on the country as a whole and the health system. Greece has experienced significant economic downturn, employment opportunities are rare and citizens face difficulties in securing their livelihood. Economic contraction has also implied limited investment in the health system: health facilities, particularly hospitals, are reported to lack equipment needed to deliver basic services; some health staff have migrated abroad or taken on multiple roles to secure a living, and human capacity needed for service delivery has therefore also depleted.

At the same time, the Greek system has had to cope with a second shock associated with the ongoing armed conflict in the Middle East: delivery of services to refugees crossing the Mediterranean as well as healthcare delivery to those refugees settling in Greece. The government has set up reception centres on its main islands and, within these, delivers a wide range of health services, including some that had never received priority within the Greek system (e.g. mental health). Fifty-seven thousand refugees resided in Greece in 2017/2018, with 60% settling on mainland Greece and the remainder residing in reception centres on Lesvos, Chios, Kos, Samos and Leros (UNHCR 2018b).

The above shocks have now resulted in considerable chronic strains on the health system, compromising the health of both host and refugee communities. Migrants particularly face:

- A high level and diversified profile of health needs: both communicable and non-communicable diseases are highly prevalent, and over 80% of refugees screened present with mental health needs that require treatment. Referrals to secondary care are high and this puts considerable strain on public services.
- Barriers to have access to healthcare: Registration with national social security authorities is a principal barrier to health access; transport and movement of refugees is additionally dependent upon the logging of an international protection applicant card. Linguistic and cultural barriers to care seeking also apply.

Examples of absorptive, adaptive and transformative resilience capacity are also evident across the Greek health system, though detailed resilience-oriented health systems assessments are likely needed to build on current crisis response:

Absorption: to mitigate the difficulties refugees face in accessing secondary care, some of the residence centres have used their own resources to provide organised transport (via bus and taxi travel) to other hospitals.

Adaptation: given the linguistic and cultural differences between Greek and refugee populations, it has been necessary for the Greek social workers to directly work inside primary healthcare settings; their role as a broker has been to create access for refugees to secondary and emergency services.

Transformation: inclusion of mental health services in Greek health facilities offered to refugees is notable; however, it is too early to state that mental health services have become routine practice in all hospitals although when delivered these services are now available to Greek patients.

To go further analysing the resilience of the Greek health system, capacities of the health system were analysed using Blanchet et al. (2017) framework.

Knowledge: only 11% of outpatient consultations are registered; the system thus does not have "live" information relating to the services it offers, nor their impact.

Uncertainty: it is unclear how the health system plans for emergencies; e.g. migration comes in ebbs and flows, but given gaps in knowledge cited above, it is unlikely the health system could predict service demand or project necessary resource allocation to meet unexpected needs.

Interdependence: it is clear that Greek authorities, NGOs as well as UNHCR collaborate in an intricate web of actors in order to secure the wellbeing of refugees. However, gaps in coordination are highlighted, particularly concerning referrals and access to secondary care.

Legitimacy: it is clear that both the refugee and economic crisis present substantive political challenges for the Greek government. Attention has largely shifted in the national discourse from addressing the needs of vulnerable Greek communities towards dealing with the challenges created by the migrant crisis—this risks alienating host communities and further may lead to difficulties in integrating refugee populations. Inter-sectoral responses—focused on both host and refugee communities and their integration efforts—are needed to meet such challenges.

Conclusion

In this chapter we put forwards a new framework for the analysis of health systems resilience, which is relevant to European countries who are trying to respond to migrants' health needs. This framework extends previously existing frameworks from ecological science to the study of health systems. Resilience is defined here as a measure of the amount of change a health system may experience and still retain control over its structure and functions. More specifically, health systems are resilient if they exhibit absorptive, adaptive or transformational capacity in the face of shocks such as a migration phenomenon. In our framework, managing health system resilience requires analysing (1) the mechanisms through which the variety of actors in the health system collect, organise, synthesise and interpret complex information, as well as the way this information feeds into complex decision-making processes; (2) the strategies health system actors may use to manage uncertainty and shocks in a very dynamic environment; (3) the interdependence of health systems with other systems (such as political and economic systems); and (4) the approaches through which health systems develop socially and contextually acceptable institutions and norms, which is very relevant when introducing the notion of migrants in some political spheres.

Large-scale migration movements may represent a "shock" to health systems and thus a test of resilient capacities, as well as a potential resource for their future strengthening. When trying to respond to migrant needs in Europe, this framework could be used by health systems researchers, health practitioners and policymakers to analyse the properties of resilient health systems and put forwards context-specific, evidence-based and comprehensive interventions to improve resilience and make sure that migrants' health can be covered with quality services.

Work on conceptualising resilience is now advancing; however, much work remains to be done on developing measurements of resilience in practice, integrating them within existing tools (such as health system assessments) and applying them in different contexts, including in European health systems in response to migratory flows. Most important of all from a policy perspective is building on early lessons in identifying determinants of resilience capacities and how to reinforce them in different contexts.

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