Chapter 21
Continuity of Care: New Approaches to a Classic Topic of Health Services Research

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Abstract Continuity of care refers to the degree to which healthcare provision is a consistent and interconnected process. It has three dimensions: relational continuity, informational continuity and management continuity. Continuity of care impacts on healthcare utilisation and health outcomes. Patients, especially those with multiple or rather complex healthcare needs, value continuity of care in terms of forming a longitudinal and trusting relationship with health professionals. In health systems, several strategies aim at achieving high continuity of care, such as case management, advanced nursing practice and integrated care. Future studies may focus on the role that patients can and want to play in enhancing continuity and how it can be optimised in fragmented healthcare systems.

21.1 Introduction

Continuity of care (CoC) is a classic theme of health services research. It has been described as "the degree to which a series of discrete health care events is experienced by people as coherent and interconnected over time and consistent

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M. Wensing, C. Ullrich (eds.), *Foundations of Health Services Research*,
https://doi.org/10.1007/978-3-031-29998-8_21

with their health needs and preferences" (WHO 2018, p. 8). CoC is particularly relevant for patients with complex healthcare needs that require the involvement of many different health professionals. This becomes even more relevant in highly fragmented health systems, which are characterised by strong separation between hospital care and ambulatory care (Wright and Mainous 2018). CoC is highly valued by patients, particularly those with many chronic conditions (Pandhi and Saultz 2006). CoC is considered to be one of the core elements of primary care (Uijen et al. 2012).

The first use of the term 'continuity of care' dates back to the 1950s and focussed on the personal relationship of a patient with a health professional. Since then, and especially within the last 20 years, the term has increasingly been used in the scientific literature. From the 1970s on, CoC has been considered as a multidimensional concept. Various definitions of the concept of CoC have been used, and they are not consistently distinguished from related concepts such as coordination of care (Uijen et al. 2012). What the various definitions have in common is that they distinguish several dimensions and consider different points of view (e.g. patients and health professionals). For this chapter, we will use the definition of the dimensions of CoC proposed by Haggerty et al. in 2003 (see Box 21.1).

Box 21.1: Definition of Continuity of Care According to Haggerty et al. (2003)

- *Relational continuity* refers to having a trusting and longitudinal relationship with a health professional.
- *Informational continuity* implies that a health professional has all relevant information on the patient and their medical history on hand.
- *Management continuity* means that if care is provided by (many) different health professionals, their approach is consistent with that of others and is congruent with the patient's needs.

The effect of CoC on healthcare utilisation and health outcomes, such as mortality, hospital (re-)admissions or quality of life, has been investigated in many studies. Baker et al. (2020) showed that high relational CoC was associated with lowered all-cause *mortality*. Furthermore, Wensing et al. (2021) compared patients participating in a strong primary care programme in Germany, regardless of age and indication, with a control group, using several relational CoC measures. They observed higher CoC in patients participating in the programme and a lowered risk of *hospital admission*, *readmission* and *hospital admission because of ambulatory care sensitive conditions*. Facchinetti et al. (2020) conducted a meta-analysis of randomised controlled trials of CoC interventions for preventing hospital readmissions

of older people with chronic conditions. Approximately 9000 individuals were included in the analysis, and the interventions were shown to have a positive effect on short-term readmission. When looking at long-term readmissions, the evidence was inconclusive. Furthermore, interventions were most effective when all dimensions of CoC were addressed. Chen et al. (2017) conducted a meta-analysis of the effect of CoC on *quality of life* in older adults with chronic conditions. Their analysis of 1400 patients found CoC to have a significant impact on quality of life, measured by using the SF-36 instrument.

In this chapter, we will first elaborate on the patients' and relatives' perspectives on CoC (Sect. 21.2) and then turn to three selected approaches to enhance CoC that have been the topic of health services research and which increase in complexity: (a) case management, (b) advanced nursing practice and (c) integrated care (21.3). Subsequently, new developments in health services research on CoC will be considered (21.4), and finally, some future perspectives are offered (21.5).

21.2 Patients' and Relatives' Perspectives on Continuity of Care

The definition of CoC from a patients' perspective according to Reid et al. (2002, p. i) is "one patient experiencing care over time as coherent and linked". From the perspective of patients and relatives, relational CoC seems to be the most recognised and most highly valued out of the three core dimensions of CoC. In most cases, patients would like to see the same health professional over a long period of time and on a regular basis, thereby building a trusting relationship. Seeing the same health professional is also preferred over receiving healthcare provided by a team with various health professionals. However, not all patients value and wish for CoC. It is generally most valued by patients with complex healthcare needs who experience the consequences of a fragmented healthcare system: elderly patients, parents of young children, females and people with lower levels of education. Furthermore, life-changing experiences that are shared with a health professional can raise the perception of the importance of CoC and help to build trust as well as a long and ongoing relationship with a health professional (Pandhi and Saultz 2006; Waibel et al. 2012).

The need and desire to reach CoC also depend on the prevailing health problem. Ehman et al. (2017) conducted a study with an anonymous survey of 770 individuals, comparing multimorbidity patients and healthy adults from family medicine centres. They found that both healthy participants and multimorbidity patients prefer CoC for routine check-ups regarding their chronic conditions or for preventive care appointments, while they are more likely to forgo this continuity for acute problems if it means they can get in touch with a physician more quickly. Yet, in acute situations, patients with multimorbidity prefer to wait longer to be seen than healthy adults if this means that they can be seen by their primary care professional instead of another member of the same care team (Ehman et al. 2017). Although the

majority of patients prefer to see their own primary care physician on a regular basis and thus knowingly or unknowingly increase relational CoC, not everyone is able to do so. Aboulghate et al. (2012) found that this possibility is less likely for women, younger patients, patients without chronic or mental conditions, and 'non-white' patients.

In contrast to relational CoC, it is more difficult to inquire whether patients perceive and value informational and management CoC. Patients are often only confronted with the concept of CoC when they experience gaps in CoC, such as obvious deficits in information transfer between health professionals. Many patients assume that CoC takes place in the form of information transfer or communication between health professionals and the availability of shared care plans (Haggerty et al. 2013).

In practice, many patients and their relatives contribute to informational and management CoC by taking on a coordinating role. They may not do so voluntarily but rather out of necessity as they have the impression that no one else is assuming this responsibility (Bossert et al. 2020). Some patients take on a 'patient-as-professional role' (Phillips et al. 2015) and coordinate their care proactively (such as by involving other health professionals). Whether a patient wants to take on an active and coordinating role in care depends on factors such as individual attitudes, cultural beliefs, familiarity with the health system and health literary (Phillips et al. 2015; Haggerty et al. 2013). Health services research is needed to explore which patients can and want to be actively involved in healthcare and where the limits to this lie.

21.3 Strategies to Enhance Continuity of Care

As a response to low CoC, various strategies have been applied to enhance CoC. *Case management* is an approach to manage the care of people with complex health and social problems and has been established in nursing and social care since the 1960s. It provides support and CoC in a fragmented healthcare system, resulting in individualised management of treatment and care across specialised health professionals. A case manager enhances CoC by offering coordination of treatment and care over time and between health professionals. Case managers are also expected to help patients access care and take charge of their care planning (Uijen et al. 2012). The role is often performed by dedicated nurses or social workers. Case management can reduce all-cause mortality and hospital readmission in specific populations, for instance, in patients with chronic heart failure (Takeda et al. 2019). It can also improve patients' quality of life, for instance, in cancer patients (Yin et al. 2020). However, case management is not universally effective, and it involves additional resources; thus, the cost-effectiveness of healthcare may be at stake (WHO 2016; Takeda et al. 2019). Also, the involvement of a case manager (usually a role with little decision-making power) may alleviate problems of lowered CoC, but it usually does not address causes that are inherent to a fragmented healthcare system.

Another strategy in which a key person takes over the coordination of care and address management continuity is the *Advanced Nursing Practice (ANP)*. ANP has been developed and used in the United States and Canada since the 1960s. The reasons

for its development are numerous, such as the shortage of physicians, especially in primary care, and the increasingly complex care and specialisation of nurses (e.g. community health, primary care or mental health; Schober 2016). The use of community health nurses as an ANP concept in the area of community care has been common practice for a long time. In Scandinavia, the UK, the United States and Canada, they are deployed in primary healthcare. They are highly specialised nurses, who are the first point of contact in primary care for health and disease-related issues. They work autonomously and take over medical tasks and coordinate care in their specialties. With regard to qualification, there are differences across nations (Hamric et al. 2013). Most community health nurses in ANP have a master's degree. In hospitals, ANP often falls under the concept of *primary nursing*. They are considered the point of contact for the patient and other professional groups involved, and they coordinate care in the hospital. This strategy can promote CoC and patient satisfaction (Manthey et al. 1970). ANP can contribute to CoC in settings which are characterised by fluctuations of physicians and other health professionals. The adoption of ANP is mixed across countries. An example of a health services research project in ANP is shown in Box 21.2.

Box 21.2: Example Advanced Nursing Practice (Laurant et al. 2018)
In their systematic review of 18 randomised trials, Laurant et al. (2018) investigated the extent to which nurses working as substitutes for primary care doctors impacted: patient outcomes, processes of care and utilisation of care, including volume and cost. Study findings suggest that care delivered by nurses (e.g. first contact care or follow-up examinations for chronic diseases such as diabetes), compared to care delivered by physicians, possibly generates similar or better health outcomes for a broad range of patient conditions. For example, nurse-led primary care may lead to slightly fewer deaths among certain groups of patients, compared to doctor-led care. The evidence was rated as low to moderate. Laurant et al. (2018) concluded that nurse practitioners or advanced practice nurses can perform physician tasks, such as consultations in primary care. Nurse-led consultations may lead to higher patient satisfaction. Overall, visits are of longer duration. However, it remains unclear how nurse-led consultations affect healthcare costs and what level of nurse education leads to the best patient outcome.

Another approach to improving CoC is *integrated care*, a concept that is not consistently defined and interchangeably used with related terms such as 'coordination', 'disease management' and 'case management'. Integrated care is purposefully designed healthcare for a defined population (e.g. diabetes patients), to provide healthcare that is coordinated across healthcare professionals and informed by the best available evidence (WHO 2016). Especially in the context of the increase in multimorbidity and complex care, programmes that overcome the fragmentation of the healthcare system, managed care and accountable care are necessary and have become popular since the year 2000. Today, variations of integrated care can be found in all countries, and there is a large body of health services research on the implementation and effectiveness of integrated care. An example of a study is shown in Box 21.3.

Box 21.3: Example Healthy Kinzig Valley Integrated Care (Schubert et al. 2021)
The Kinzig valley in southwestern Germany is a best-practice model region that has implemented an integrated care concept on a large scale ('Healthy Kinzig Valley Integrated Care'; German: *Integrierte Versorgung Gesundes Kinzigtal*). The aim is to overcome the fragmentation of the healthcare system and promote CoC. It is a network of general practitioners, specialists and clinicians, psychotherapists, care facilities and physiotherapists that plans and coordinates treatment for those insured by the AOK (German: *Allgemeine Ortskrankenkasse*) Baden-Württemberg and the Social Insurance for Agriculture, Forestry, and Horticulture. Despite some positive effects in the first 5 years, the elaborate 10-year evaluation of the programme showed neither an improvement nor a deterioration in the quality of healthcare compared to structurally similar control regions. Early evaluations suggested cost savings due to higher efficiency of healthcare delivery.

21.4 New Developments Regarding Continuity of Care in Health Services Research

Health services research on CoC is traditionally based on interviews and surveys in patients and health professionals (Schang et al. 2013). A method to measure CoC from the patients' perspectives is to use the Nijmegen Continuity Questionnaire (NCQ), which was developed in the Netherlands. This questionnaire includes 28 items within three subscales: 'personal continuity: care provider knows me', 'personal continuity: care provider shows commitment' and 'teams/cross-boundary continuity' (Uijen et al. 2011).

With the increasing availability of routine data, which are often derived from computerised clinical and administrative patient data, interesting computational approaches to research CoC have emerged. For instance, widely used measures of CoC are the Bice–Boxerman Continuity of Care Index, the Herfindahl Index, the Usual Provider of Care Index (UPC) and the Sequential Continuity of Care Index (SECON). The Bice–Boxerman Index, the Herfindahl Index and UPC are all indices that measure the rate of all provider contacts with the same provider (usually the general practitioner). As they all depict the same construct, they are highly correlated. All indices are simplifications of a complex construct and should only be seen as proxies, which should be interpreted carefully (Pollack et al. 2016) (Box 21.4).

Box 21.4: Example Measuring Continuity of Care (Forstner et al. 2023)
In patients with chronic obstructive pulmonary disease (COPD), hospital readmission rates are very high. Reasons are, amongst others, a high burden of comorbidity and frequent exacerbations. Therefore, in a study focusing on the impact of provider connectedness on CoC after hospital discharge and readmission rates, Forstner et al. (2023) calculated the SECON to measure CoC. This index, unlike other indices, does not depict the share of contacts that are with the same provider but considers whether consecutive consultations are with the same provider or with another as the previous consultation. Thus, the SECON does justice to the fact that patients with a high burden of comorbidity need to see several healthcare providers to receive appropriate treatment for their conditions. The index can take on values between 0 and 1 with 1 indicating perfect CoC. In their study, patients with COPD had a mean SECON of 0.73 in the year after hospital discharge. The authors found provider connectedness to impact on CoC and readmission rates but other factors appeared to be more important.

21.5 Conclusions and Future Prospects

This chapter focusses on CoC, a classic topic of health services research. CoC is highly valued by many patients, and it contributes to health outcomes. A range of approaches to enhance CoC are applied in healthcare settings and have been the topic of many evaluation studies. Future studies may focus on the role that patients can and want to play in enhancing CoC.

More fundamentally, one may consider how much CoC is desirable. High provider CoC can develop a positive doctor–patient relationship that gives patients confidence and security (Wilfling et al. 2021). On the other hand, such a relationship can also be inhibited if sensitive issues are to be addressed. In these cases, some patients might choose to actively interrupt CoC. While high provider CoC and relationship CoC can achieve high-quality patient care and patient satisfaction, this can be especially stressful for health professionals. A good and trusting relationship with the patient can cause the work–life balance to falter and can be emotionally distressing. New generations of health workers tend to favour a different work–life balance than previous generations, which inevitably involves reduced relational CoC. Care models that include high relational CoC thus might be beneficial for the patient, but it remains to be seen whether it is viable in the long run.

Furthermore, it remains an open question whether CoC can and should be an aim in a healthcare system that involves high specialisation (Wright and Mainous 2018). Increasing numbers of patients have various morbidities that require the involvement of different specialists from time to time. A balance or combination of high CoC and involvement of specialised health professionals needs to be found and would be a topic for future research.

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