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Implementation of patient-centred care: which system-level determinants matter from a decision maker's perspective? Results from a qualitative interview study across various health and social care organisations

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ABSTRACT

Objectives The healthcare system is characterised by a high degree of complexity and involves various actors at different institutional levels and in different care contexts. To implement patient-centred care (PCC) successfully, a multidimensional consideration of influencing factors is required. Our qualitative study aims to identify system-level determinants of PCC implementation from the perspective of different health and social care organisations (HSCOs).

Design A qualitative study using n=20 semistructured face-to-face interviews with n=24 participants was carried out between August 2017 and May 2018. Interview data were analysed based on concepts of qualitative content analysis using an inductive and deductive approach.

Setting and participants Interviews were conducted with clinical and managerial decision makers from multiple HSCOs in the model region of Cologne, Germany. Participants were recruited via networks of practice partners and cold calling.

Results This study identified various determinants on the system level that are associated with PCC implementation. Decision makers described external regulations as generating an economically controlled alignment of the healthcare system. The availability and qualification of staff resources and patient-related incentives of financial resources were identified as an eminent requirement for providers to deliver PCC. Participants considered the strict separation of financing and delivery of healthcare into inpatient and outpatient sectors to be a barrier to PCC. Interorganisational collaboration and information exchange were identified as facilitators of PCC, as they enable continuous patient care cycles.

Conclusion The results showed the necessity of enforcing paradigm changes at the system level from disease-centredness to patient-centredness while aligning policy and reimbursement decisions directly with patient needs and values. A systematic, long-term planned strategy that extends across all organisations is lacking, rather each organisation seeks its own possibilities to implement PCC activities under external restrictions.

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Strengths and limitations of this study

- As the participants of the study are decision makers from health and social care organisations (HSCOs) in various healthcare contexts, the identified determinants reflect the wide range of heterogeneous healthcare organisations from an internal practical perspective.
- The computer-assisted qualitative content analysis based on the Consolidated Framework for Implementation Research and a systematic literature review ensures a systematic and methodically controlled text analysis.
- When generalising the results to different healthcare systems, specifics of the German healthcare system need to be taken into account, as only German HSCO decision makers were interviewed.
- As the participants received no compensation for participation, they might have had higher motivation and interest in the research topic and might be more likely to put effort into patient-centred care activities if incentives were offered.

INTRODUCTION

As awareness of its merits is growing, patient-centred care (PCC) has received increasing attention as a fundamental concept in healthcare provision, along with its aspiration to focus on patients' needs and preferences, and to involve the patient in the provision of healthcare.[1–3] This marks a departure from

previously dominant biomedical, disease-centred healthcare provision.[4 5]

Although the literature has dealt with PCC for several years, a clear and common understanding in research is missing.[2] A widely used definition used by the Institute of Medicine describes PCC as 'providing care that is respectful of, and responsive to, individual patient preferences, needs and values, and ensuring that patient values guide all clinical decisions'.[6] The implementation of PCC structures has been shown to improve healthcare provision in the face of increasing demand for health services and limited resources by affecting economic aspects (eg, reduced resource utilisation, improved cost-effectiveness), as well as patient-related features (eg, better health outcomes, higher patient satisfaction).[7–10]

PCC is characterised by its multidimensionality, which has been described with various models and frameworks. These models vary by healthcare setting and level of activity, but they share interconnecting dimensions of the PCC concept as individualised care for patients, patient information and involvement in care, physical and emotional support, integration of medical and non-medical care, access to care and coordination and continuity of care.[11]

Successful implementation requires a practical analysis of determinants, their relation to each other and their extent of influence.[2 11] Therefore, the research project OrgValue explores the decision makers' as well as the patients' perspective on the implementation of PCC in the metropolitan region of Cologne, Germany.[12] Within this study, determinants of PCC implementation at the organisational and individual levels across different health and social care organisations (HSCOs) have already been explored.[13] Determinants on the level of the healthcare system have still to be examined.

The healthcare system shows a high degree of complexity and involves various actors at different institutional levels and in different care contexts in the regulation and provision of healthcare. In the German healthcare system, the strong division into inpatient and outpatient healthcare sectors poses a particular challenge. Consequently, the conditions, interests and availability of resources vary between different HSCOs.[14 15] A multiperspective approach is required taking into account the viewpoints of different healthcare actors.[11 16]

Prior research agrees that determinants influencing the implementation of PCC occur at the system level, as well as at the individual and organisational levels. The definition of system level in this paper is based on the defined outer setting dimension of the Consolidated Framework for Implementation Research (CFIR)[17] and includes the wider social, cultural, political and economic context.[8 18 19]

Identified system-level determinants of the implementation of PCC activities identified in the literature so far include regulatory policies,[11 20–22] funding,[22–24] qualification of healthcare professionals[8 25] and healthcare system characteristics and structures.[18 22–24] Online supplemental appendix table 1 gives an overview of implementation determinants—general system-level determinants of healthcare interventions as well as determinants specific to the implementation of PCC. However, previous research does not provide an overview of facilitating and hindering influences of PCC implementation at the system level can be applied across care settings and consider different perspectives of decision makers in the healthcare system.

Accordingly, this study aims to advance research on determinants of PCC implementation and complements our previous analysis of organisational and individual determinants[13] by identifying PCC-related determinants on the system level as perceived from HSCO perspectives in various care contexts. Designed as a qualitative interview study, the research was conducted to provide an overview of determinants faced by HSCOs on the system level, assessing common determinants across different healthcare contexts.

METHODS

Setting: German health and social care system

Within the framework of the social health insurance set by the German state, regulation, organisation and distribution of financial resources of healthcare services are delegated to institutions of the joint self-government. The highest decision-making body is the Federal Joint Committee (in German: Gemeinsamer Bundesausschuss (G-BA)), in which providers, payers and patients are represented. G-BA regulations are legally binding on all healthcare actors. As the healthcare system strictly differentiates between inpatient and outpatient actors, healthcare delivery and financing also generally observe this division. Ambulatory care is mostly provided by general practitioners (GP), specialists and ambulatory healthcare centres. Inpatient care is provided by hospitals, rehabilitation institutes and long-term care. Each of the healthcare fields is subject to a different mode of financing. The extensive separation of care sectors is seen as a challenge to the German healthcare system because it complicates the provision of continuous care and information transfer processes.[26]

In Germany, the principle of 'free choice of physicians' exists, under which insured persons can decide for themselves which physician, dentist or psychotherapist they wish to consult. GPs are assigned responsibilities for coordinating care—for example, writing referrals to specialists—but they have no defined gatekeeper function. The provision of outpatient services via hospitals has not been standard practice up to now and is only possible via selective contracts between single providers and social health insurance companies in the course of special and integrated care (in German: besondere und integrierte Versorgung).[26 27] The implementation of PCC activities in the German regulatory setting of the healthcare system is currently bolstered by the implementation of disease management programmes,[28] adjustments to the Law on Patient Rights and research programmes in this field.[29–31]

Study design

The present qualitative study is part of the research project OrgValue (Characteristics of Value-Based Health and Social Care from Organizations' Perspectives) which is embedded in the Cologne Care Research and Development Network (CoRe-Net). CoRe-Net is an interdisciplinary cooperative effort that enables the integration of different perspectives and methods in the investigation of cross-sectoral healthcare for specific patient groups in Cologne, Germany. Presently, it carries out four subprojects.[32] The subproject OrgValue aims to examine the implementation of patient-centredness in the metropolitan region of Cologne from organisations and patients' perspectives.[12] The mixed methods study combines qualitative and quantitative social research. This analysis is based on qualitative interviews with HSCO decision makers.[13]

Sampling and data collection

The interviewees reflect a sample of HSCOs involved in caring for vulnerable patient groups studied in the accompanying projects within CoRe-Net in the metropolitan region of the city of Cologne, Germany. Clinical and managerial decision makers with different (in some cases multiple) functionalities were interviewed to obtain multiple perspectives. Online supplemental appendix table 2 provides an overview of participant characteristics, such as gender, type of care organisation and organisational tenure. Researchers of the OrgValue project conducted the interviews face to face. A semistructured qualitative interview guide was developed focusing on three main topics:

- How do decision makers define PCC?
- What obstructs or facilitates the implementation of PCC in their organisation?
- How do organisations deal with their resources, that is, which resources are needed or lacking for implementation?

Core questions and narrative-generating subquestions operationalised each topic. Interviews were audiotaped and transcribed verbatim and anonymised by an external professional typist. Further information on sampling, data collection and interviewee characteristics can be found elsewhere.[13]

Patient and public involvement

Patients and members of the public were not involved in the conduct of this study. However, this study is embedded within CoRe-Net, which is a network of scientists, patient organisations, HSCOs, municipality representatives and other stakeholders.[32] CoRe-Net members participated in developing ideas for the OrgValue project, its conduction and data collection.[12]

Data analysis

Interviews were audiotaped, transcribed verbatim and anonymised by an external professional typist. All transcripts were entered into the computer-assisted qualitative data analysis software 'MAXQDA', which was used to code and manage data (VERBI, Berlin, Germany).

The semistructured interviews were analysed using qualitative content analysis (QCA). QCA fits the intention of this study which is to extract data content in a descriptive, systematic and conceptualising way that reflects the perspectives of the interviewees from different HSCOs but does not identify underlying meanings.[33]

A coding frame consisting of system-level determinants was developed in a multistage process of deductive and inductive coding. Figure 1 displays the entire coding process step by step. As a first step, transcripts were read and important text passages marked, which allowed for familiarisation with the contents of the interviews. In advance of the first coding cycle, a concept-driven, deductive strategy was used to create an initial coding frame based on established theories and previous research experience.[33] Dimensions of the CFIR provided the foundation for the deductive framework. The CFIR is a well-established meta-theoretical framework that provides an assortment of implementation-related constructs organised across five major domains, all of which interact to influence implementation: intervention characteristics, outer setting, inner setting, characteristics of the individuals involved and process of implementation. We used the category 'outer setting' of the CFIR to capture and categorise the determinants of PCC implementation which includes the categories of patient needs and resources, cosmopolitanism, peer pressure, external policies and incentives.[17] To strengthen the coding foundation, the deductive framework was further developed alongside the CFIR categories by other constructs derived from the pertinent research literature on system-level determinants (online supplemental appendix table 1). Reliability was strengthened by defining all categories before analysis and storing them in the software to prevent misunderstandings or inconsistent assignment of units of analysis to codes.[33]

The initial coding framework was used to code the entire material in the first-cycle coding. After the first coding process using the established deductive framework, the existing codes were further differentiated and subcodes formed according to inductive category formation.[33 34] The deductive coded text areas were worked through, summarised if necessary and new subcodes extracted from them. After each redefinition of codes and subcodes, the previously coded material was reviewed again and recoded, if necessary. The final coding agenda can be found in the online supplemental appendix.

RESULTS

For the data analysis, 20 interviews with 24 decision makers on 20 different dates were used. The 24 interviewed decision makers were divided into private practice GPs and specialists (n=3), psychotherapists (n=3), long-term outpatient care (n=4), outpatient rehabilitation

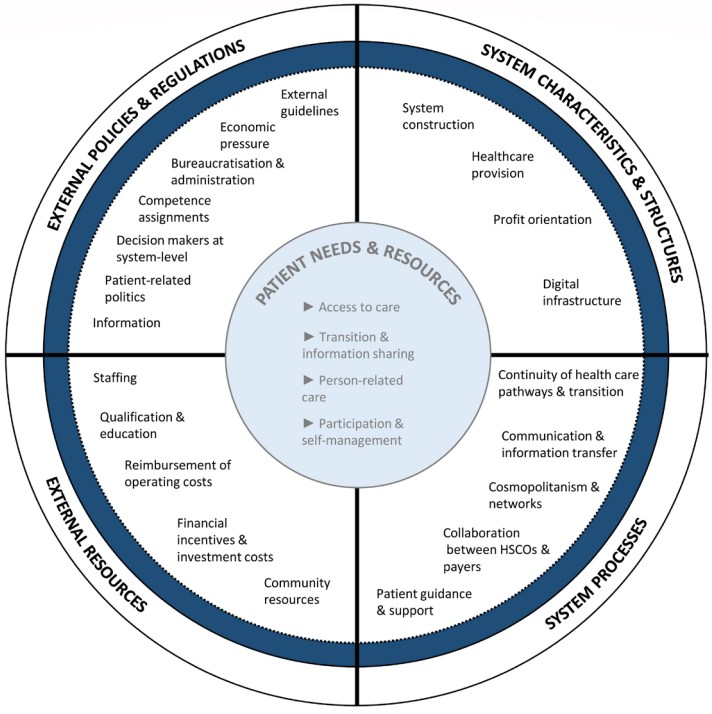

Figure 1 System-level determinants of patient-centred care (PCC) implementation. HSCO, health and social care organisation.

services and rehabilitation clinics (n=4), long-term inpatient care (n=5) and hospitals (n=5).

Online supplemental appendix table 3 provides an overview of the developed categories, including a short description of each code. Determinants of PCC implementation related to external policies and regulation, system characteristics and structures, system processes and external resources are described, substantiated by quotes from the interviews (table 1). Along with the coding framework, results are presented as textual fragments summarising the content of the coded interview segments. Relevant passages were translated into English.

The category 'patient needs and resources' was identified as a central element of the determinant framework, as the extent to which patient needs and resources are recognised and prioritised at the system level defines the extent to which PCC activities can be implemented in HSCOs. Descriptions and quotations for codes in this category can be found in the online supplemental appendix tables 4 and 5.

System characteristics and structures

System construction

Some decision makers described the overall healthcare system as complex and conservative with many interacting stakeholders impeding the implementation of new concepts. In addition, the basic structure of the system with its division from the top level down in inpatient and outpatient care was assessed as obstructive, which is related to the content of the category system processes, as explained below.

Healthcare provision

Several interviewees connected deficits in healthcare provision to capacity deficits in various sectors. They described deficits as internal systemic obstacles to guaranteeing the best possible—(ie, timely and comprehensive)—patient care. Deficits in long-term care (ie, insufficient nursing home vacancies or lack of available outpatient services) were described as hampering the continuity of care after patients are discharged from the hospital.

Profit orientation

The focus on continuous growth and profit maximisation in healthcare has been seen as threatening a shift away from prioritising patient welfare and towards economic considerations. Although all providers acknowledged the need to economise, they associated a focus on patient well-being with a certain set of values as being incompatible with strictly economic thinking and, therefore, more commonly linked to non-profit than for-profit organisations. In this context, interviewees questioned the paradigm of economic growth in the sense that current healthcare provision is most often a matter of providing the most innovative medicine and more services to increase profit without considering the extent to which these improvements serve the well-being and needs of patients.

Digital infrastructure

Interviewees described deficits of digitalisation in the healthcare sector as disrupting care structures and patient orientation. They emphasised that integrative, person-centred and timely provision of health-related patient information and efficient exchange of such information among service

Table 1 Determinants of PCC implementation related to the system level

Determinant	Quotes
System characteristics and structures	
System construction	'So, I already feel that the health care sector or the hospital sector is a very conservative area, so the willingness to do things in new ways is not very pronounced. […] because with actors all enmeshed like gears, it is of course extremely difficult to turn any adjusting screw without completely disrupting the overall system.' 'Well, I think this sector separation needs to be softened. This fragmentation of conditions and responsibilities does not benefit the patient.'
Healthcare provision	'[…] and then you hear we're already the eighth caregiver I've called. Well, in the meantime, nursing care is so understaffed in many regions that ad hoc care is not possible in many cases, and that as a nurse you really have to choose who I want and who I can care for.'
Profit orientation	'And otherwise I do believe that this profit-driven health care system is not reasonable. That health is not a commodity. I think so. And that everything should not always be geared towards optimizing the financial situation.' 'That means in terms of practice it is an individual decision how to digitize, how to equip my clinic, how far am I willing to make investments to make a clinic work quickly and efficiently.'
Digital infrastructure	'But also the topic of digitalization. I think that here in the hospital we are still at the back end of the queue with digitalization, as far as the care processes are concerned. The systems don't talk to each other, the interfaces are not properly linked. […] I think that the topic of standardizing interfaces and information systems should be given from the very top.' 'That means in terms of practice it is an individual decision how to digitize, how to equip my clinic, how far am I willing to make investments to make a clinic work quickly and efficiently.'
System processes	
Continuity of care processes and transition	'What is often a problem for patients is the time after discharge. And, of course, as a hospital, this can only be achieved to a certain extent, because in the end, the remuneration ends when the threshold is crossed.' 'And of course, in some situations or cases, it is difficult to ensure a flow. That is, regardless of whether it is a rehab place or a home for the elderly or home outpatient care or similar, so this downstream care is not quite so simple, even in Cologne.'
Communication and information sharing	'For me, not only the communication within my own professional group is a decisive factor, but also how one professional group communicates with others […] And I also believe that these parameters […] are needed for certain interventions in order to be able to work person-centred. […] There are breaks, […] This may be because information does not flow, or the communication of information is not continuous […].'
Cosmopolitanism and networks	'If I take the field of oncology now […] both inpatient and outpatient, we have the possibility to provide care in the form of an oncology unit, a palliative care unit, a hospice […] and in the other direction, we have access to outpatient practices. […] Another example is that we have cooperation with owners in the same practice […] with whom we have a very trustful relationship where the physicians work half in the hospital and half in the practice, it works well there. They admit the patients, they take care of them as in-patients, and then they go back to the general practitioners.'
Collaboration between HSCOs and payers	'Yes, often, for example, when it comes to the supply of medical aids, to (clicks) when a resident needs a specially adapted new wheelchair, then it often takes weeks […] until the right aid is available on site. And I experience this as very, very long. So this … sometimes the aid that we would actually need is no longer needed by the time it actually arrives.' 'In the last nine months, I have in fact come so far from accepting cost reimbursement patients because the social health insurances, I have to say it so clearly, have become really impudent.'
Patient guidance and support	'[…] you can almost study that at the university level, right? How do I get a therapy place? And what is the difference between a psychiatrist, psychological psychotherapist, medical psychotherapist, counselling. […] then there are the different therapeutic directions, […] Well, I don't find it easy to find my way around that at all if I'm also someone […] who's not well. And who actually just wants help.' '[t]hat you're a little more patient-oriented, that you really look at what he [the patient] needs when he needs it and how he gets there. Yes? And what assistance exists, what support options are there, and what is a person entitled to in such a situation?'
External resources	
Staffing	'[…] the subject of skilled workers is of course … or shortage of skilled workers, the main topic in the branch, which also has an effect on patient orientation, from my point of view.' 'These are really structural problems and you can't really fight them. And of course, we are also noticing that the ratio of skilled workers on the market is decreasing. […] Although we have good opportunities here or really offer great pay for skilled workers themselves compared to our competitors, there are not many left.'
Qualification and education	'I think, the topic of skilled workers, we are really heading for this situation, where it becomes the bottleneck in the economy and you have to fear that on the one hand, if you no longer have skilled workers, you will go into a D-qualification. In other words, anyone can do anything. Following the principle, four week nursing staff who give injections, hang infusions and so on at the end. …because there's nobody else.' 'And also the quality of the staff. Do I only work with assistants or do the people know what they have to do, right? And that's becoming more and more of an issue these days.'
Reimbursement of operating costs	'I think what's very important is that you have to be able to respond to changing needs, depending on a person's condition on a given day, right? […]. So, to get out of these organisational constraints and to have the freedom to decide every day anew, what is it that the patient needs today? […] That freedom is not there because outpatient care depends on these fixed fees for groups of services and you can only bill for an entire complex.' 'The time now to communicate again by telephone or other, personal things with external facilities, this is not given. This is just stupidly not provided for in the system. So, there is no paid time for that. That's a pity, but that's how it is.' 'The [budget regulation] is basically not wrong with trying to limit a budget … or costs. Unnecessary costs. On the other hand, such lump-sum budgets are of course sometimes unnecessarily restrictive from a systemic point of view, because they do not take any special cases or few special cases into account.'

Continued

Table 1 Continued

Determinant	Quotes
Financial incentives and investment costs	'These are such rigid structures; it is not intended that innovations are brought in now. At least not if you want some form of financing. […] It's just something we buy to […] offer the patient improved care. But nothing where we know that we'll get rich now, or even that we can recoup these costs soon.' 'Yes, it's about the financing. For example, this project [.] won't be financed. Professor [.] set this up as a pilot and said that we had to finance it out of our own pocket because we expect to benefit from it. For patient care and the quality of patient care. […] there is again no regular funding for such projects and there has not been any funding from foundations to date. But I think that this is a promising approach for the future.'
Community resources	'The fact that people say that we have active church communities […] they should not only be working next to each other, but rather working hand in hand with each other, knowing about each other, supporting each other, including the volunteers in the work. And from this (name of the association) can still benefit greatly from the fact that volunteers can be involved.' 'We have 40 volunteers who can run errands. They're all jumping through hoops here.'
External policies and regulations	
External guidelines	'I think the main cause is simply the nurses-to-patient ratio. […] And everyone knows that, actually. Yes, on every level. Also, on the political level. And as long as there is no change there, basically nothing can change about these problems. […] Not only on the labour market but also concretely at the patient's bedside, for the people. For the services that can be provided within the given framework conditions are declining. And at some point, something must happen in order to cause changes there.'
Economic pressure	'[…] in my perception the health system, our health system is part of our whole … our whole growth culture here. That there is incredible pressure, that the curves always have to go up, […] there is of course also an external pressure.' 'So, there's no big profits going down here. And also economically, it is always a squaring of the circle, how do I manage it, right? To manage the whole thing financially somehow, with top medical quality. It's hard to achieve.'
Bureaucratisation and administration	'[The required documentation] binds an incredible number of people who are also very well trained for the actual care of patients. […] if you add up how many people are involved in this every day […] then we wouldn't be talking about a shortage of specialists if these people were available in large numbers for patient care […]. Because it is already made extremely bureaucratic and extremely time-consuming.'
Competence assignments	'And I think we still have a lot of room to manoeuvre when it comes to the division of tasks among the health care professions. But there are also barriers and boundaries, physicians do not want to do allocation, just delegation. Nursing staff no longer want to be constantly patronized. […] So, under delegation they are allowed to do everything, but being responsible and having an independent attitude, that is not desired.' 'It would make it much more patient-centered if therapists could just get started. […] Meanwhile there are so many of them with a master's degree or even a dissertation, therapists, I think you could manage that quite well without endangering patients. If you wouldn't always involve the physician in the process.'
Decision makers at system level	'[…] there's the Medical Association, but there's no Nursing Association. So all these decisions are made by… by the physicians and the medical lobby groups, right? But for nurses… it's very much in the hands of the physicians, in my opinion.'
Patient-directed policies	'[…] but politics has also done some good. The SAPV teams. This is an optimal and successful solution and we also notice (…?) #01:13:29# as an improvement. Well, this regulation is really something where it made sense. […] The SAPV team is available around the clock, 24 hours a day, for the resident when he needs it.'
Information	'And that's where it's important to know what options I have, for example, that I can apply for a severely disabled person's card, that there is a transport service via the health insurance company if certain conditions are fulfilled, and all such things, right?'

HSCO, health and social care organisation; PCC, patient-centred care; SAPV, specialised outpatient palliative care.

providers reinforces PCC. On the other hand, insufficient or fragmented information technology (IT) structures lead to information gaps, hampering care provider cooperations. According to interviewees, there are no system-level incentives for the provision of an adequate digital infrastructure, which means that digitalisation depends on the willingness of individual providers to invest in it. The introduction of a central electronic healthcare platform where information about patients would be systematically collected was recommended as a strategy to facilitate cooperation among providers, bolstering transparency and providing information to patients.

System processes

Continuity of care pathways and transition

In the acute care context in particular, interviewees highlighted the importance of offering patients cross-sectoral continuity of care. They regarded immediate further treatment and cotreatment by other providers, including referrals and timely appointments, to be very important. Decision makers of all care contexts agreed that separation of inpatient and outpatient sectors in terms of organisation and remuneration was a critical point in the provision of PCC. These processes are further complicated by other disruptive external factors, including shortages of specialists, psychotherapists and long-term care organisations.

The GP as gatekeeper concept was considered as a strategy with the potential to support PCC by managing and monitoring treatment paths.

Communication and information transfer

Many interviewees identified efficient communication and high-performance information systems as important prerequisites for PCC within organisations and between organisations. Mutual exchange or at least simple information sharing between HSCOs was described as essential to optimise treatment pathways and ensure continuity of care, especially in more complex cases. Next to improving patient care, information sharing was seen to harbour the

potential to improve the efficiency of the whole system by reducing duplicate and unnecessary examinations.

As the system currently does not offer comprehensive cross-organisational information systems, there are many gaps and interface problems in the information transfer. Organisations addressed problems regarding the availability of prestationary medical information, information transfer after discharge and the lack of interaction with downstream providers to which their patients are sent for further treatment. In fact, most of the time, patients themselves are responsible for the transmission of relevant information. Only a few interviewees mentioned their efforts at communication with other providers and the sharing of patient-relevant information via telephone or fax.

Cosmopolitanism and networks

Beyond information transfer and communication, all outpatient decision makers addressed willingness to interact and collaborate in a structured way with other providers as a factor supporting PCC. This form of cosmopolitanism refers to the ability or willingness of an organisation to open up and network with persons or organisations outside its own boundaries. While interviewees particularly emphasised informal networks between HSCOs, they commented less on formal networks and contracts.

Decision makers mentioned examples of interdisciplinary and intersectoral networking promoting PCC such as structured collaboration with follow-up care providers in order to ensure continuity and quality of care or cooperation agreements with providers to guarantee basic medical care for long-term care residents. The special importance of networks was highlighted in the area of cancer treatment, with oncological centres ensuring all-round care, including diagnostics, radiation, chemotherapy and surgery, in both the outpatient and inpatient realms.

Specialised outpatient palliative care (SAPV) was mentioned as a positive example of how PCC can be promoted by networks. Through structured cooperation between SAPV teams and inpatient facilities such as long-term care or hospices, adequate and timely high-quality palliative care can be ensured.

Collaboration between HSCOs and payers

Similar to inadequate collaboration between providers, collaboration between providers and payers was also felt to have many problems with the practicability of processes and the duration of requests. Interviewees evaluated the bureaucratisation of processes as causing additional effort for providers and waste of resources. They stated that regulations and approvals from insurance companies are sometimes contrary to the needs of patients and medical indications. Interviewees complained that reimbursement requests for treatments are regularly denied even though they are medically justified. Routine delays in the authorisation of cost assumptions were perceived as extremely burdensome and potentially harmful to patients as were payment delays occasioned by social welfare authorities.

Patient guidance and support

Guiding patients through 'the healthcare jungle' was regarded as an important although currently underdeveloped part of PCC. In the absence of guidance, the fragmentation of the healthcare system and inadequate provider collaboration means that patients are set on treatment paths that are not targeted oriented, complicated or disconnected. In emergency departments, this disorientation is reflected by misdirected patient flows. Several interviewees felt that support options were especially required in the transition between the inpatient and outpatient sectors, a state of affairs that has been addressed by the recently introduced statutory discharge management in the German healthcare system.

The interviewees also associated PCC with educating patients about their rights and informing them about further support opportunities in addition to medical treatment at psychosocial care or advisory centres.

One interviewee suggested the introduction of patient guides, which might be provided by payers and might accompany and coordinate treatment across care providers.

External resources

Staffing

Interviewees identified a lack of human resources, inevitably accompanied by time scarcity, as a crucial factor influencing the adoption of PCC. Staff shortages were consistently linked to shortages of time allotted for patient care. Decision makers identified two external factors as having a bearing on the shortage of skilled workers in HSCOs: on the one hand, there is a shortage of skilled professionals in the labour market and, on the other hand, the financial resources provided for staffing in organisations are not sufficient to allow for a higher ratio of professionals to patients.

The interviewees agreed on the causes of staff shortages, identifying such factors as income, working hours and other working conditions. In the medical field, salary differences were presented as problematic because these lead to a concentration of personnel shortages in certain areas such as rehabilitation. The administrative burden and documentation effort, which occupies skilled workers with tasks that do not benefit patients, were also named as a cause of shortages.

Qualification and education

The shortage of skilled workers also causes problems in that organisations have to deal with less qualified staff and consequently lower rates of skilled employees within organisations which, according to interviewees, inevitably leads to lower quality of care. This problem was emphasised by decision makers in inpatient care organisations for acute care (hospitals) as well as by those in long-term care (long-term care organisations and hospices).

Interviewees saw the integration of PCC contents into training as a precondition for PCC in actual patient care. Medical training, they argued, should be adapted to the changing needs of patients and society. As examples of this, interviewees brought up the care of geriatric patients with dementia or delirium and palliative care.

Reimbursement of operating costs

Interviewees in all care contexts called the reimbursement of healthcare services as the determinant of high interest. The control and incentive functions of reimbursement forms were seen as obstructive and, in certain respects, as being contrary to PCC and high-quality care.

Hospital decision makers perceived economic pressure as a result of flat rate payments via Diagnosis Related Groups (DRGs) because it may offer incentives to provide services solely for economic reasons. In particular, several interviewees described the documentation and administration required for reimbursement by social health insurances (SHIs) as a hindrance to focusing on patient-related work. Interviewees who worked in institutions under charitable ownership stated that there were intentions to use financial resources to finance patient-oriented services even when they are not reimbursed.

Budgeting in the outpatient sector and bulk reimbursement for groups of services (in German: Leistungskomplexe) in long-term care limit providers in their scope of action because there is no flexibility to adapt care to the preferences or resources of the patient, especially treating 'special cases' in an adequate manner.

The separate financing schemes in inpatient and outpatient sectors render PCC more difficult at least in part because of efforts to ease cross-sectoral transitioning and cooperation, often causing financial losses to providers, and offering no incentives for providers to look beyond their own domains.

In all care contexts, interviewees described a lack of funding for communication with patients, relatives or other providers which, in their opinion, is an essential precondition for PCC.

Financial incentives and investment costs

Decision makers from acute inpatient care organisations pointed out that insufficient funds for equipment, investments or innovations prevented HSCOs from investing in health innovations that might ensure advanced patient care. Interviewees also reported a gap between the relatively abundant funds available for research and those available for implementation in practice.

Although interviewees regarded centres offering continuous care from a single source as very advanced and patient-oriented institutions, they criticised the number of surcharges. On the one hand, the surcharges were not sufficient to compensate for expenditures; on the other hand, they were not guaranteed in the long run. Notwithstanding current deficiencies, however, some decision makers cited different possible financing options supporting PCC, such as *integrated provision contracts* (in German: integrierte Versorgungsverträge).

Community resources

Only decision makers from long-term care organisations and hospices reported their utilisation of community resources in support of PCC. Community-aided services included collaboration with parishes to ensure assistance for patients after discharge and performance of non-medical tasks by volunteers. In one example, only funding provided by a volunteer association made it possible to provide psychosocial care to patients. However, interviewees found the process of obtaining community resources difficult and time consuming.

External policies and regulations

External guidelines

Many decision makers perceived external regulations to be overly numerous and rigid. However, flexibility and a wide scope of action available to care providers were seen as preconditions for the provision of PCC. Inflexible external regulations cause problems that limit the number of therapy sessions or number of therapy days at the system level, although in contrast to regulatory authorities providers themselves are in a much better position to assess the number of sessions needed by individual patients with respect to their individual needs. The legally defined stability of contribution rates (in German: Beitragssatzstabilität) (Fundamental principle in statutory health insurance, which is intended to ensure that the expenditure of the statutory health insurance funds does not rise faster than their contribution-related income. (§71, Sozialgesetzbuch (SGB V). Fünftes Buch Gesetzliche Krankenversicherung, 1989))[35] was mentioned as external capping to meet the demands of the increasing number of patients and medical developments.

Economic pressure

Interviewees described the increasing focus of the healthcare system on profit and the resulting external economic pressure as hindering the implementation of PCC activities; in the outpatient sector by budgeting, and in the inpatient sector by DRGs or *fixed cost degression* (in German: Fixkostendegressionsabschlag) (Discount to be counted by hospitals that have agreed on additional healthcare services compared with the previous year in the annual budget negotiations with the social health insurances (§4, Krankenhausentgeltgesetz (KHEntgG), 2003[36])). Particularly in inpatient care, decision makers saw themselves as hard pressed, to balance high-quality care with the economic stability of organisations, a state of affairs potentially leading to disagreements over priorities between managers and healthcare professionals.

Bureaucratisation and administration

Interviewees from the inpatient sector stressed external administrative requirements and documentation efforts as an essential barrier to PCC. The availability of documentation was considered important, but decision

makers described excessive bureaucratic documentation processes as a burden, tying up financial and human resources that are consequently unavailable for patient care. Above all, interviewees criticised the discrepancy between administrative burdens on the one hand and reimbursement of documentation time on the other.

Competence assignments

From some interviewees, impediments to PCC were identified in the externally imposed division of tasks between occupational groups and resulting constraints. In the hospital sector, this problem was especially evident in the division of tasks between physicians and nursing staff, and in the rehabilitation sector in the treatment options available to therapists, who can only deliver treatments ordered by physicians. Consequently, the expansion of competence areas and scope for action for individual occupational groups were described as supportive of PCC.

Decision makers at system level

Few interviewees from the nursing sector in hospitals and long-term care institutions criticised the lack of nursing representatives in important decision-making corporations such as the Federal Joint Committee. As a result, an important perspective on decisions affecting the healthcare system may be overlooked. This means that aspects relating to the adequate care of patients such as the ratio of professional to patient may not be considered to the same extent as strictly medical aspects.

Patient-related policies

Decision makers in all areas of care evaluated the influence of laws specifically designed to strengthen PCC in daily healthcare practices. Interviewees mentioned the federal drug plan, the legally binding provision of SAPV, the legally binding discharge management, and introduced psychotherapy reform including home treatment as examples that emphasise the policies' practical impact.

Information

Occasionally, interviewees described ways of disseminating information at the system level. According to them, PCC requires the public education of patients on their rights and available support options. The referenced means of public information to inform and empower patients included seminars and mass media campaigns.

DISCUSSION

To enable organisations to implement PCC activities, patient needs and resources need to be prioritised at the system level.[24 25 37 38] Against this background, this study aimed to identify facilitators and barriers to PCC implementation at the outer setting (system level) from the decision makers' perspective as well as by deriving measures and strategies to improve implementation. QCA of decision makers' interviews revealed an economically controlled alignment of the healthcare system through external regulations. Interviewees emphasised that lacking financial and human resources, sector separation, system processes preventing continuous care cycles and missing guidance and support for patients are obstacles for organisations introducing PCC activities.

Attributed to the extent of regulation of the German healthcare system, interviewees considered external policies and regulations as influencing the provider's practice to a large extent. The literature agrees that the implementation of PCC activities depends a lot on external policies.[11 20] Inpatient decision makers (hospitals and long-term care organisations) in particular perceived external guidelines as obstructive with regard to restrictions in fields of action and administration efforts. Participants discussed that the overall culture and orientation of the healthcare system are often not oriented towards patient needs, but increasingly oriented towards economic and financial objectives. Accordingly, healthcare associations call for a change from profit maximisation and revenue-driven care towards non-profit-oriented medicine with a greater focus on the well-being of patients.[39]

Overall, the system construction was identified as a hindering factor, since the strict separation of organisation and healthcare delivery in inpatient and outpatient sectors and deficits in healthcare capacities (eg, in psychotherapy or specialist care) lead to fragmented care processes and a lack of coordination, collaboration and continuity of care.[18 22 40] As a legally established approach to bridging the sector separation, structured discharge management has been established according to §39 1a of SGB V. Since then, hospitals in Germany have been legally obligated to prepare the discharge of patients from the hospital to a rehabilitation, outpatient or long-term care facility in order to avoid gaps in care due to a lack of coordinated follow-up treatment.[35]

Faced with limited financial resources and economic pressure, decision makers have perceived difficulties in finding the right balance of PCC, quality demands and economic performance. The separated remuneration structure between inpatient and outpatient providers—caused by sector separation and actual payment models focusing on the volume of healthcare services—apparently set incentives for organisations to follow only their own targets for a defined field of action instead of collaborating and providing continuous and coordinated care and transitions for patients during the whole care process. The findings of this study regarding financial determinants are consistent with previous work on PCC, which identified financing and payment models as crucial to adopting and maintaining new care structures.[19 24 41–43] One approach aiming to eliminate these financial obstacles and disincentives is the value-based healthcare approach, strongly influenced by Porter.[44] Within that approach, value for patients is the goal that unites the interests of all healthcare system participants and should therefore be the focus of healthcare delivery and remuneration. Following the value-based approach, payment models that promote high value and patient-centredness need to be tied to achieving patient-relevant outcomes

related to the full cycle of care. Porter and Lee[23] proposed bundled payments to reimburse providers for all the care required to treat a patient's particular medical condition as an alternative to paying providers for each discrete service delivered in the care cycle. Another topic of this approach, which is consistent with the study's findings, is the meaning of interorganisational competition and peer pressure. Contrary to the literature,[17 19 45 46] interviewees described the motivation for the provision of PCC not as a competitive advantage but as the organisation's engagement and feeling of responsibility for care. Porter and Lee explained that competition in the healthcare system does not lead to value improvement and thus does not improve patient care if competitive incentives are related only to costs, bargaining or control over patients instead of to patient-relevant outcomes.[23]

Consistent with previous studies, the lack of IT infrastructure in the form of electronic information systems or health platforms is seen to impede the establishment of PCC structures. The interorganisational transfer of patient-specific clinical information could ensure consistent and continuous information transfer between providers to weaken the limitations and boundaries of sector separation.[6 7 23] Additionally, these structures may inform and empower patients, as well as improve information exchange between patients and providers.[25 40] In Germany, the Law on Digital Health Care Provision (in German: Digitale-Versorgung-Gesetz) may bring PCC in the health service forward by the improved possibilities of information passing on, cooperation and transparency with nationwide electronic patient record and electronic prescriptions.[47] Policymakers should more intensively discuss opportunities for improved IT structures in HSCOs systematically and comprehensively.

Strengths and limitations

Our study has several limitations. First, the interviewees only represent HSCOs in the German healthcare system, so the results are only conditionally transferable to healthcare systems of other countries. Nevertheless, there are multiple points of intersection in the identified determinants of PCC to different healthcare systems. The setting of the study, the city of Cologne, implies that determinants applied to more rural areas are neglected. However, some interviewees reported experiences in former places, in which the situation of healthcare deficits and staff shortages are even more acute. The literature also emphasises the importance of taking regional care situations and special features into account when planning and structuring future care concepts. Second, the sample of the interviewees might suffer from selection bias because the participants received no compensation. Consequently, it can be assumed that participants had higher motivation and interest in the research topic and might be more likely to put effort into PCC activities. The sample size of 20 interviews can also be seen as a limitation, as some care contexts are represented only by one HSCO. However, we consider the insider perspective of participants belonging to different types of HSCOs to be a strength. The findings of this study give an overview of the system-level factors considered decisive for PCC implementation from the decision makers' internal and practical viewpoint. Moreover, the diversity of interviewees from different healthcare sectors enables us to identify the interconnectedness of system-level determinants in different contexts.

CONCLUSION

System-level characteristics are associated with the way and extent to which HSCOs implement PCC activities (eg, external policies, financial resources, staff shortages, sector separation, digitalisation). A systematic, long-term planned strategy on the system level to improve PCC that extends across all organisations is lacking; rather, each organisation seeks its own possibilities to implement PCC activities under the external restrictions. For the success of PCC, it seems necessary to enforce paradigm shifts on the system level from disease-centredness to patient-centredness. Policy and reimbursement decisions should be aligned directly with patient needs and values to support collaboration and cooperation between providers. The action framework of providers should be expanded along care cycles to increase continuity of care. Improved and IT-supported guidance structures for patients to pass through pathways across providers and sector borders in a timely, efficient and targeted way may ensure coordination of care and prevent underuse, overuse or misuse of healthcare services.

Future research should apply in-depth analysis of individual facilitators and barriers to offer concrete policy implications to foster PCC implementation in organisations. As the findings of the study suggest that economic pressure and financial incentives are decisive for PCC implementation, future research should investigate whether specific reimbursement models and different forms of healthcare provision have an impact on PCC activities. Future research might focus on the impact of PCC on economic advantages and efficient healthcare provision. Various studies,[48–50] such as that of Porter and Lee on the value-based healthcare approach,[23] indicate that focusing on patient needs, outcomes and increased patient participation can lead to improved cost-effectiveness. Furthermore, a detailed analysis of systematic differences between types or ownership of HSCOs is needed to validate the findings of this study.

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Contributors LA, SS, LK and HP conceived the study. KIH, VV and HH specified the methods. KIH, VV and HH conducted the interviews. KIH, VV, HH and CL analysed the interviews. CL drafted and revised the manuscript in cooperation with KIH and VV. All authors critically read, revised and approved the final manuscript. CL is the guarantor of the study.

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Supplementary Appendix

Appendix Table 1 gives an overview of implementation determinants - general system-level determinants as well as determinants related specifically to the implementation of PCC. The first column from left ("Categories") identifies the main determinant categories that have been analysed in the literature. The second column from the left ("Examples describing the relevance of categories") gives example citations to illustrate the relevance of the category. The third column from the left ("Sources Health care") lists literature sources in which references to system-level determinants related to the implementation of interventions in the health care sector have been found in the course of the literature research. The last column from the left ("Sources PCC") completes the literature list with sources in which references to the system-level determinants have been found in direct relation to PCC.

Appendix Table 1: System-level determinants influencing the implementation of interventions in health care

Categories	**Examples describing the relevance of categories**	**Sources Health care**	**Sources PCC**
External policies & regulations	"Broad constructs that encompass external strategies to spread interventions, including policy and regulations (governmental or other central entity), external mandates, recommendations and guidelines, pay-for-performance, collaboratives, and public or benchmark reporting." (Damschroder et al., 2009, p. 7) "Beginning at the broadest level, the state and federal sociopolitical and funding contexts influence the exploration of innovative interventions or practices." (Aarons et al., 2011, p. 6) "A policy "push" occurring at the early stage of implementation of an innovation initiative can increase its chances of success, perhaps most crucially by making available a dedicated funding." (Greenhalgh et al., 2004, p. 610)	Grol (1997); Meyers, Sivakumur, & Nakata (1999); Wagner et al. (2001); Denis et al. (2002); Greenhalgh et al. (2004); Fixsen et al. (2005); Cochrane et al. (2007); Mendel et al. (2008); Durlak & Dupre (2008); Damschroder et al. (2009); Aarons et al. (2011); Lau et al. (2016)	Wagner et al. (2001); Ashton (2015); Alridge et al. (2016); Scholl et al. (2018)
External resources	"The factors most often mentioned were reimbursement policies and the behavior of health plans and insurers." (Wagner, 2001, p. 76) "The implementation and ongoing sustainability of CCMs was sometimes costly, and without sufficient funding, the process was likely to fail." (Davy et al., 2015, p. 8) "If there is dedicated and ongoing funding for its implementation, the innovation is more likely to be implemented and routinized." (Greenhalgh et al., 2004, p. 611) "Resource constraints of various types were identified as one of the most common barriers to innovation uptake. Innovations that could not be billed for or reimbursed under a fee-for-service model were difficult to sustain." (Moore et al., 2016, p. 25) "Community resources available to assist with interventions can help make a complex	Grol (1997); Wagner et al. (2001); Grol & Grimshaw (2003); Greenhalgh et al. (2004); Fixsen et al. (2005); Institute of Medicine (2001); West et al. (2005); Cochrane et al. (2007); Mendel et al. (2008); Durlak & Dupre (2008); Feldstein & Glasgow (2008); Damschroder et al. (2009); Epstein et al., (2010); Aarons et al. (2011); Davy et al. (2015); Moore et al. (2016); Lau et al., (2016)	West et al. (2005); Levinson et al. (2010); Epstein et al., (2010); Pelzang (2010); Porter & Lee, (2013); van der Eijk et al. (2013); Ashton (2015); Davy et al. (2015); Lüdecke, (2014); Bergeson & Dean (2006); Alridge et al. (2016); Santana et al. (2018)

	intervention affordable for organizations." (Feldstein & Glasgow, 2008, p. 237)		
System characteristics & structures	"The emerging categories of barriers (TABLE 2) are: […] ▪ System and process barriers: lack of organization and structure, lack of harmony with health and oversight systems, lack of referral process, lack of workload-outcome balance, lack of teamwork structure and ethic" (Cochrane et al., 2007, p. 97) "Partnering with other healthcare services such as hospitals and specialist services was considered to facilitate the implementation and sustainability of CCMs." (Davy et al., 2015, p. 8) "Interorganizational Networks. The more complex the implementation that is needed for a particular innovation, the greater the significance of the interorganizational network will be to the implementation's success." (Greenhalgh et al., 2004, p. 612)	Grol (1997); Meyers et al. (1999); Wagner et al. (2001); Greenhalgh et al. (2004); Cochrane et al. (2007); Mendel et al. (2008); Feldstein & Glasgow (2008); Durlak & Dupre (2008); Damschroder et al. (2009); Aarons et al. (2011); Davy et al. (2015); Moore et al. (2015)	Bergeson & Dean (2006); Pelzang (2010): Porter & Lee (2013); van der Eijk (2013); Lüdecke (2014); Davy et al. (2015); Ashton (2015); Kadu & Stalee (2015); Alridge et al. (2016); Santana et al. (2018)
Peer pressure & competition	"Mimetic or competitive pressure to implement an intervention, typically because most or other key peer or competing organizations have already implemented or in pursuit of a competitive edge." (Damschroder et al., 2009, p. 7) "The sheer number of organizations adopting an innovation can cause a bandwagon pressure, prompting other organizations to adopt this innovation. […] Competitive bandwagon pressures occur because nonadopters fear below-average performance if many competitors profit from adopting." (Abrahamson & Rosenkopf, 1993, p. 487) "Institutional theory perspectives of isomorphic pressures and institutional strategies may provide a new understanding for health care organizations seeking effective knowledge creation strategies within institutional environment of health care sector." (Yang et al., 2007, p. 263)	Abrahamson & Rosenkopf (1993); Meyers et al. (1999); Greenhalgh et al. (2004); Yang et al. (2007); Feldstein & Glasgow (2008); Damschroder et al. (2009);	Moore et al. (2017)
Cosmopolitanism	"The degree to which an organization is networked with other external organizations. Organizations that support and promote external boundary-spanning roles of their staff are more likely to implement new practices quickly." (Damschroder et al., 2009, p. 7) "An important influence on an organization's decision to adopt is whether a threshold proportion of comparable (homophilous) organizations have done so or plan to do so. […] A 'cosmopolitan' organisation (one that is externally well networked with others) will be more amenable to this influence." (Greenhalgh., 2005, p. 13)	Robertson & Wind (1983); Rogers (1995); Greenhalgh et al. (2004); Damschroder et al. (2009); Mendel et al. (2008); Aarons et al. (2011)	Wagner et al. (2001)

Patient needs & resources	"The extent to which patient needs, as well as barriers and facilitators to meet those needs, are accurately known and prioritized by the organization." (Damschroder, 2009, p. 7) "Thirty studies found that patient characteristics, attitudes, knowledge, or behaviors such as adherence were barriers to evidence-based care or implementation of guidelines." (Cochrane et al., 2007, p. 99)	Grol & Grimshaw (2003); Cochrane et al. (2007); Feldstein & Glasgow (2008); Durlak & Dupre, 2008; Damschroder et al. (2009); Davy et al. (2015); Keith et al. (2017)	Brown et al. (2006); Davy et al. (2015); Kadu & Stalee (2015)
Information & proclamation	"Media & change agents: While potential adopters of interventions are best characterized as active participants in the processes of diffusion, so too are external sources of information and influence on innovative practices." (Mendel et al., 2008, p. 27) "[…] there is evidence that these channels of communication (mass media interventions) may have an important role in influencing the use of health care interventions." (Grilli et al., 2002, p. 2)	Grilli et al. (2002); Grol & Grimshaw (2003); Mendel et al. (2008); Lau et al. (2016)	

Appendix Table 2: Interviewees by gender, age, type of care organisation, and organisational tenure

Characteristics	Total (N = 24)
Gender	
Male	15
Female	9
Age (years)	
25-34	1
35-44	6
45-54	11
55-64	6
Type of HSCOs	
GPs and private practice specialists	3
Psychotherapists	3
Long-term outpatient care	4
Outpatient rehabilitation services and rehabilitation clinics	4
Long-term inpatient care (including hospices)	5
Hospitals	5
Organisational tenure (years)	
less than 5	5
5-10	5
10-19	10
20 or more	2

Note: organisational tenure not available for n=2 interviewees.

A coding agenda with the title of codes and subcodes, definitions, and coding rules was generated at the beginning of the qualitative content analysis and extended continuously in the process of analysis.

Appendix Table 3: Coding agenda

Determinants of PCC implementation related to the system-level: external policies & regulations, system construction, system processes, & external resources	
External policies & regulations	
External guidelines	Characteristics of external regulations and extent to which these influence the way in which patient care can be provided by HSCOs.
Economic pressure	Extent to which external regulations generate financial and economic pressure on HSCOs
Bureaucratisation & administration	Specifications on external requirements for documentation, bureaucratic processes, and formalities, which impair healthcare delivery.
Competence assignments	Legally defined scopes of action of professional groups that restrict patient care.
Decision makers at system-level	Representation of healthcare actors in the decision-making by government or panels of the joint self-administration.
Patient directed policies	Ways in which the implementation process is enforced by laws and regulations that are directly addressed to influence patient care.
Information	Ways in which PCC related topics are advertised and spread by public bodies.
System characteristics & structures	
System construction	Regulation of the healthcare system and interrelation between healthcare actors influencing the implementation of PCC
Healthcare provision	Shortages of healthcare services in different care settings affecting the adequate and continuous provision of healthcare.
Profit orientation	The extent to which the orientation of certain organisations towards profit changes the way healthcare is delivered.
Digital infrastructure	The provision and accommodation of IT infrastructure and e-health platforms by the healthcare system.
System processes	
Continuity of care processes & transition	Ways in which the system provides a framework for collaboration between providers in relation to continuous, cross-sectoral care for patients
Communication & information sharing	Ways in which the system provides a framework for collaboration between providers related to how providers communicate with each other and share information.
Cosmopolitanism & networks	Ways in which providers collaborate in a systematic way and build formal or informal networks.
Collaboration between HSCOs & payers	Actions between healthcare providers and payers, e.g. social health insurance, social accident insurance, or employers' liability insurance association
Patient guidance & support	Ways in which activities on system-level promote support of patients or guidance through healthcare processes.
External resources	
Staffing	Specifications on healthcare personnel resources, reasons for shortages and impact on patient care.
Qualification & education	Extent to which the staff available on the labour market meet the requirements for adequate patient care
Reimbursement of operating costs	Ways in which reimbursement forms influence the way providers deliver PCC activities.

Financial incentives & investment costs	Extent to which financial incentives are set on system-level to implement new models of care. It also included the extent to which investment costs required for the implementation are financed.
Community resources	Ways in which services of the community are used to support professional healthcare delivery.

The main category 'Patient needs and resources' displays the decision makers' view of which patient related aspects are important for PCC and in what they are currently recognised and prioritised on system-level.

Appendix Table 4: Coding Agenda

Determinants of PCC implementation related to the system-level: patient needs & resources	
Patient needs & resources	
Access to care	Ways in which the patient needs of getting access to care as well as determinants to meet those needs are recognised and considered on the system-level.
Transition & information sharing	Ways in which patient needs of continuous care pathways and flow of information, as well as determinants to meet those needs, are recognised and considered at system-level.
Person-related care	Ways in which patient needs to be treated as a person as well as determinants to meet those needs are recognised and considered at system-level.
Participation & self-management	Ways in which activities to use patients' resources and to support patients' participation and self-management are promoted on the outer setting.

In the following, summaries, code definitions and example quotes (Appendix Table 3) are presented to describe decision maker`s perspectives about the understanding of patients' needs and resources on system-level.

Access to care

Decision makers pointed out that the ability of the healthcare system to provide rapid and local access to appropriate healthcare was essential for meeting patients' needs. While interviewees did not criticise the delivery of first aid nor of interventions in life-threatening situations, they did censure capacity limits and healthcare deficits in specialised outpatient care, psychotherapy, and long-term care because they complicate the adequate and continuous delivery of care to patients suffering from chronic or complex diseases.

Transition and information sharing

Well-functioning transitions including continuous care pathways and transfer of information within a healthcare network were highlighted as fundamental to meeting patient needs, especially in the care of chronically ill and elderly patients. Information gaps due to missing communication structures between providers not only waste resources - in the form of double examinations - but are also a burden on patients. If information about the patient's medical history was transferred and inter-organisational platforms and providers interact with each other, care could be more target oriented. Decision makers from medical centres evaluated as integral to PPC a high degree of information transfer and interdisciplinary all-around care from a single source.

Person-related care

Interviewees saw the holistic view of the patient as a person with various individual health and psychosocial issues as an important dimension of PCC. Decision makers did not call into question evidence-based medicine but asserted that, in addition to medical processes, standards, guidelines, and economic aspects, patients should be considered individually and taken seriously with their concerns and demands, even when patient choices may deviate from the best possible and most

efficient treatment pathway. Interviewees saw a lack of attention to and consciousness of this holistic approach in system-level healthcare management, with some regulations explicitly contradicting it, particularly reimbursement incentives. An interviewee argued for the individualisation of care in these terms:

GP-centred care was classified as a possibility to promote person-related care, as this form of care allows the patient to be treated holistically over a longer period of time and guided through the system. Interviewees also argued that consideration of the psychosocial level and the structural inclusion of family and relatives into patient treatment was supportive of PCC, i.e. of delivering person-related care.

Participation and self-management

Interviewees saw PCC in the context of empowered and participating patients but rarely mentioned system-level activities in connection with this dimension of PCC. In long-term outpatient care, systematic paradigm shifts in the conceptualisation of patient care were described as being underway, from a problem-oriented to a skill-oriented view of care with the current forms of remuneration not yet caught up with this general trend. At the same time, statements by interviewees from the outpatient acute care setting show that possibilities of self-management in primary care, such as self-managed coagulation control, have not been considered yet.

Interviewees also mentioned the 'Patient Rights Law', setting the legal foundation of patients' rights, and the 'Coalition for Patient Safety' (in German: 'Aktionsbündnis Patientensicherheit') as supporting PCC at the system level by aiming to inform patients and to promote patient empowerment and participation. The free choice of physicians currently available to patients was also seen as promoting PCC, as it credits patients with the competence to decide for themselves and change providers in case of dissatisfaction.

Appendix Table 5: Decision makers' understanding of patient needs and resources

Patient needs & resources	Quotes
Access to care	'On the other hand, it is also important for the patient to be able to go to a specialist quickly. Right? That he does not have to drive far for an eternity or wait very long for a physician's appointment'. 'Well, there I would find optimal patient care, that an appointment can be found quickly for an initial consultation, where it can be clarified what is present, what problems exist, what would have to be done, which treatment would be useful. And if it could take place promptly'.
Transition & information sharing	'In the case of a chronic disease, I wish that I had a continuous care team, which I know, which knows me. Where I know, so to speak, when there are changes in medication or in my state of health, that I do not have to start over again and again for an eternity, but that there is also previous knowledge. That people know my story. And that one can act well and quickly in order to have the best possible attitude or change in the therapy'. 'Well, on the one hand there are certainly the patients who simply do not leave the treatment with a therapeutic setting. But who need long-term care. And there I would say they are well cared for, if they are well connected. So, if it is not only the therapist that they can turn to, but that there are social workers, that there are physicians, occupational therapists perhaps, contact points'.
Person-related care	'Because a human being is, of course, something other than a car. If my car isn't running, I take it to the repair shop and it stays there until it runs again, right? (smiling) That's not so easy to do with a human being. [...] That has something to do with patient centring, individualisation of the therapy goals. [...] And then that will certainly be progressive, too, in recording these results and reimbursing them accordingly. That's a little revolution in that sense'. 'The same is when I can do a TAVI on 90-year-olds today, i.e. a cardiac catheter examination, you don't have to operate any more, you can do it via a catheter, so to speak, but then the patients with 90 require more care, they are delirious and demented afterwards. [...] Then I've managed to do something great with machines, but the quality of life and the independence and autonomy are gone. If I don't have the resources to take care of these over 90-year-olds afterwards. And I think people just think too briefly. […] afterwards the human being falls by the wayside and stands alone. And there, I think, it is somehow a break in the system'.
Participation & self-management	'[…] I think the safest way is that the patient, as long as he can, takes care of himself, demands things, that he is strengthened in his role, in his profession, to demand things. And not to be turned away. Yes? For that, he needs to be […] well informed, what are his rights, what are his duties? What are his entitlements? What is paid? So to have good information, to give him support, which is already available today, about the patient rights law and also support, APS, prepare for a physician discussion […]'. 'This is, after all, a recurring theme in the discussion about the extent to which patients are given the opportunity to decide for themselves which physician they go to. From my point of view, I think it makes sense that there is a free choice of physicians. So that a patient can also change doctors if he is dissatisfied'.