

Understanding Healthcare Design Transformations. Insights from the Swedish Experience

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Abstract. In Europe, most countries are facing common healthcare challenges that lead to a need for innovation, effectiveness and efficiency in the healthcare systems. This is often addressed through actions and intentions including enhanced primary and integrated care. However, these developments seem to be progressing slowly and non-uniformly, nor is there knowledge exchange, and the full implications of these changes on healthcare design are still unfolding. The research presented investigates what are the current trends in healthcare systems and the effects on design transformations, focusing on the Swedish experience. In Sweden, a reform known as “*Nära Vård*” [Close Care], aims to “reconstruct” the core of the healthcare service around primary care. It strives to bring care “closer” to people and communities concerning access to both care and the facilities where it is delivered. The objective of this paper is to understand what can be learnt from the Swedish experience; the research presented aims at investigating the effects of the Close Care reform on primary care facilities design. The study was conducted from April to July 2023, and it consisted of: i) desk research and literature review; ii) data collection through 12 interviews with experts; iii) data analysis through qualitative content analysis; iv) study visits to local care facilities. From the interviews, 10 factors for change and 9 challenges emerged. Moreover, it appears that the organisational structure of the Swedish healthcare system caters for regional and individual projects’ interpretations of how to bring care “closer” to the patients; this variation allows for a broader understanding of the advantages and drawbacks of each organisational model and design, and it reinforces the idea that there is no “one-size-fits-all” for close care. This diversity points to a need for a project evaluation program of the ongoing experiences, aimed at assessing the performance and effectiveness of each approach.

Keywords. Healthcare design, primary care facilities, local healthcare facilities, community, post-project evaluation

1. Introduction

In the latest decades and especially in recent years, most European (EU) countries have been facing common healthcare (HC) challenges that have led to an unprecedented need

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to increase the efficiency of the national healthcare service (NHS) delivery. Most healthcare services and facilities that shall support this development were built in a different era and addressed different needs. Today's challenges are related to the rising demand for healthcare, due to the global trends: i) ageing of the population; ii) increase in chronic diseases and co-morbidity; iii) medical developments and growingly advanced treatment methods. These developments have changed the majority of needs towards promotive and long-term care efforts. They have resulted in reduced mortality rates, significantly improved possibilities of treating and curing many medical conditions and higher numbers of patients requiring basic care treatment and management that extend over longer periods of time. In addition, there is increased awareness of the need to prevent as much as possible through healthy lifestyles.

On the other hand, healthcare systems have been progressively confronting rapidly changing and more complex conditions, as well as contributing factors such as financial crises and constraints, healthcare staff shortages and climate, environmental and pandemic emergencies. They have also been presented with challenges concerning developments in multi-disciplinary, skill-mixed and collaborative work, as well as advances in technology and digital opportunities (Figure 1).

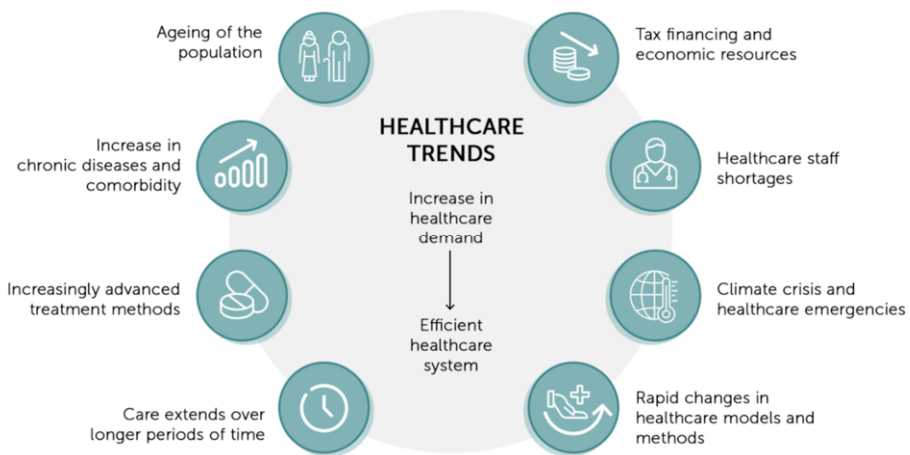


Figure 1. General healthcare trends leading to changes in Europe.

These challenges, impacting both the demand and the supply side, prompt healthcare systems to adapt and maximise their efficiency and effectiveness to respond to the current health needs of the population [1].

In this emerging context, several studies [1-3] have underlined the importance and effectiveness of a strengthened role of the primary care (PC) system in dealing with changing needs, on account of its accessibility, early management of patients, better quality of care, focus on prevention, ability to reduce unnecessary hospital admissions and, as highlighted in the latest emergency events during the Covid-19 pandemic, its invaluable contribution to emergency preparedness [4]. The role of primary care during the pandemic has been acknowledged as critically important with regards to screening, triage, contact tracing and in the short-term and long-term physical and psychological monitoring and management of patients [5]. This eventually supports the healthcare

network by avoiding unnecessary hospitalisations, thus the risk of infection for patients. In line with these considerations and driven by major challenges requiring healthcare systems to become more economically efficient, many European countries' healthcare policies have been foreseeing a transition towards enhanced primary care and integrated care [6-7].

However, despite the long-standing discussion about advancements in this field, the actual developments seem to be progressing quite slowly, and the full implications of these changes on healthcare design are still unfolding.

The following paragraphs illustrate the objectives and methodology and convey and discuss the results of a research investigating current trends and challenges leading to healthcare systems and healthcare design transformations, focusing on the Swedish experience.

2. Objectives

As most EU countries are undergoing transformations in their healthcare systems, there is a dire need to understand how these are reflected in the design of healthcare facilities. Given the similarities between the evolutions undertaken by different countries, it is important to create an overview of international knowledge and lessons learnt. In this rapidly evolving context, such knowledge exchange would ensure that current and future projects can be informed by international experiences and learnings, offering a framework that can significantly impact developments and support quality improvement and excellence within the built environment.

For this reason, this research is aimed to contribute to the creation of this overview, by investigating the current leading trends and challenges, as well as the evolutions in healthcare design and primary care healthcare facilities' developments in Sweden, understanding what can be learnt from these experiences and how this knowledge could inform future healthcare design in other international contexts and transformations.

3. Methodology

3.1. Desk research and literature review

The literature review about healthcare design in Sweden included research papers, reports, national and local policies and recommendations. The review process involved keyword searches on the main available repositories (e.g. Google Scholar, Science Direct, etc.) and search on the Swedish website providing information on healthcare services and healthcare design (e.g. SKR – Swedish Association of Local Authorities and Regions, Socialstyrelsen – National Board of Health and Welfare, etc.).

3.2. Interviews with experts

Interviews were conducted with Swedish experts with different backgrounds, ranging from architecture and construction to healthcare planning, medicine and nursing, as well as academic teaching and research in the subject area. They interviewees were selected

according to their relevant expertise in relation to primary care planning and provision, understanding of or knowledge about primary care facilities and healthcare design. Most interviews were individual, while two of them were carried out with two participants at the same time, accounting for a total of 14 experts. The interviews were carried out either in person – when possible – or online, through digital meeting platforms (i.e. Google Meet, Teams).

The interviews followed a semi-structured format, with a set of guiding questions that supported the conversation. However, they were designed to have a dialogue-like character, encouraging an open and flexible discussion with the participants. This method allows the interviewer to ask follow-up questions based on the respondent's answers, enabling a dynamic interaction between the interviewer and participant [8-9]. Before each interview started, a brief introduction was provided to let the respondents get acquainted with the interviewer, the ongoing research and the topics that would be covered during the discussion. Each interview was recorded with the explicit permission of the interviewees.

3.3. Conventional qualitative content analysis

The text was transcribed from audio recordings and edited to remove irrelevant parts and repetitions. Afterwards, the text was proofread while listening to the recording.

The text of the interviews was then analysed through qualitative content analysis. This method allows to organise large amounts of written records, gaining understanding of a phenomenon in a subjective but scientific manner [10, 11], through systematic coding and thematic categorisation to reveal the context, patterns and themes [12, 13]. In conventional qualitative content analysis, preconceived categories are not used, and new insights can emerge from the data. In addition, the advantage is that knowledge generated from conventional content analysis is grounded in the actual data, and the researcher can usually gain a richer understanding of a phenomenon [13].

Following the steps described by Hsieh & Shannon [13], the analysis started with reading the scripts to obtain a sense of the text as a whole [14]. An in-depth immersion and taking notes are then required to derive codes, intended as units of text with similar meaning. The initial coding scheme usually comes directly from the words contained in the text; by progressing with and reiterating the process, labels for codes emerge that are reflective of more units, and of the meaning of the text. Codes that are related to each other are then sorted into categories (or groups). These are used to organise the text into meaningful clusters, that are ideally between 10 and 15 [13].

As described above, after reading and taking notes, the coding scheme of the transcribed text was based on inductive category development [15], through which codes are derived from the text and later sorted into categories according to their meaning. The coding scheme was then revised after implementation, and the text was re-coded for consistency.

4. Findings

4.1. The Swedish healthcare system

The Swedish healthcare system is highly decentralised. The Ministry of Health and Social Affairs is responsible for establishing health principles, policies and guidelines, while the 21 regional bodies are responsible for planning, financing and providing healthcare services, and the 290 municipalities are accountable for organising care for the elderly and for people with disabilities [16]. Regional bodies are grouped into six medical care regions² to facilitate cooperation in tertiary care [17] (Figure 2). This configuration is designed to give regions and municipalities considerable freedom with regard to the planning and organisation of their health services [17].

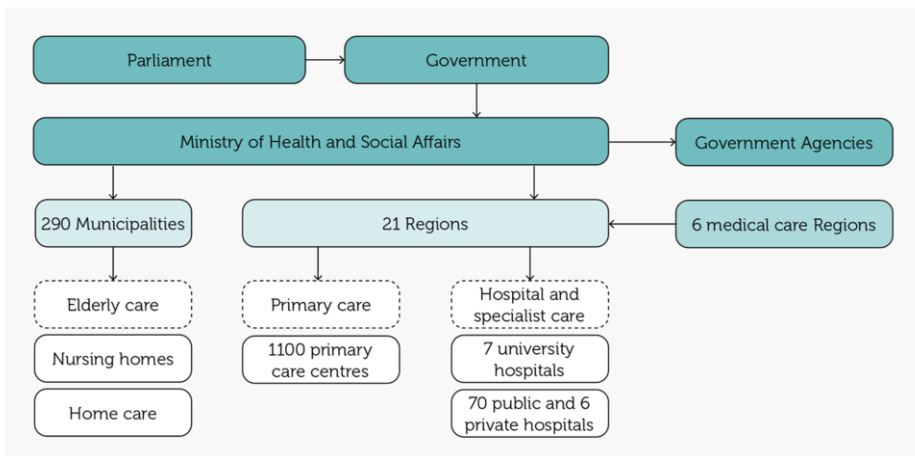


Figure 2. Illustration of the Swedish healthcare system organisation.

At the regional level, healthcare services can be divided into primary care, with approximately 1200 primary care centres around the country – 40% of them being privately owned [18] – and secondary care, with about 70 district hospitals and 7 regional/university hospitals [19].

Primary care is the first contact point in the healthcare system, it consists of services that do not require advanced treatments and equipment and it should be responsible for redirecting patients towards the right level of care, according to their specific needs. These services are provided by GPs, midwives, physiotherapists, psychologists, gynaecologists and district nurses – both in primary and municipal care – who, in Sweden, have greater responsibilities than in other countries and play a significant role as first contact with patients and home care.

Slightly more than half of all visits occur in primary care and the remainder in outpatient hospital settings [20], and in recent times primary care accounts for about 17% of the total healthcare expenditures [19].

In Sweden, primary care has developed its importance since the 1990s, when structural changes were foreseen implying an increased reliance on outpatient care and

² These are the Stockholm region, the south-eastern region, the southern region, the western region, the Uppsala–Örebro region and the northern region.

primary care rather than hospital inpatient care. Since then, doctor visits per person increased accordingly, even though the number remains lower than in the other Nordic countries [17].

This led, in 2000, to the introduction of a national action plan for the strengthening of primary care, psychiatric care and care for older people, and to the allocation of regional funds to sustain these three areas and improve the collaboration between county councils and municipalities [17]. Moreover, between 2007 and 2010 – with the election of the centre-right coalition government – reforms were issued to introduce choice and privatisation of primary care, with the result of 223 new private primary care centres being established on the traditional Swedish primary care model with quite large health centres that employ a multidisciplinary workforce. This was equal to a 23% increase in primary care centres, most of which are in densely populated areas, and two-thirds are in the three major regions of Stockholm, Skåne and Västra Götaland [21].

Even though some national and regional reforms focused on developing primary care and coordinated care for older people, the Swedish healthcare system has seen more investments in acute hospitals and specialised care rather than in primary care [22]. Reforms to restructure the hospital sector were prioritised, initiating a debate about the so-called “unfinished structural reform”, as changes within the hospital sector had not been followed by adequate development in community services in the form of primary care and care for older people by municipalities [23]. Overall, even today, healthcare in Sweden is still largely organised with a focus on inpatient care and hospitals [18].

4.2. *The Close Care Reform*

In 2013, the government commissioned a national study to analyse how healthcare could use resources more efficiently. The report highlighted that in Sweden, as in most countries, the healthcare system is not fully able to handle the population’s needs properly, due to the different challenges that applied at the time of its design and conception. This brought about the need for a structural reform to strengthen primary care at the frontline of healthcare services.

More recently, a reform of primary care was initiated, setting the goal of “reconstructing” the core of the healthcare system around primary care, ensuring good coordination and cooperation with social services and other levels of care, with a particular focus on accessibility, participation and continuity. On 1 July 2021, new provisions in the Health and Medical Care Act (2017:30) [24] entered into force, including a national mission for primary care, based on the Government Bill *The orientation for close and accessible care – a primary care reform* [25]. This reform is known as “*Nära Vård*” [close care]. “Close” is intended both physically – expressing the need to relocate healthcare services within local communities to enhance equal access to primary care, both in densely populated and remote areas – and conceptually – conveying the need for a person-centred approach that revolves around individual needs, preferences and resources in all stages of the care pathway [18] and that improves continuity and appropriate access to the right levels of care.

In 2023, in line with the close care reform objectives³, the resources to be allocated for the development of community care, with a focus on primary care, account for 2389 million SEK (around 206 million euros, on 21st July 2023) [18].

³ The Government Bill 2019/20:164 sets the following objectives: 1) increased accessibility to primary care; 2) more involvement of patients and person-centred care; 3) increased continuity of care.

In the next paragraphs, a brief overview of the reform will be presented, with a focus on the areas prioritised for funding in the year 2023⁴: i) transition to local care; ii) accessibility; iii) continuity; iv) patient's participation; v) primary care in rural areas.

- i. As far as the transition to **"local care"** is concerned, the pandemic emergency has highlighted the importance of the collaboration among healthcare authorities and providers in order to pursue a person-centred approach. The reform sets cooperation between regional and municipal care as a prerequisite for the transition to close care, given the essential role of both in providing primary care, hence the need to create a joint structure for its planning. In addition, collaboration is especially needed throughout the transition in order to reach a shared understanding of how it should be developed and followed-up between municipalities and regions. Collaboration should not only take place between regions' primary care and the various care forms that municipalities engage in, but also with other relevant activities and actors, such as dental care, social services, schools and their student health services, occupational health services, specialised care and civil society through coordination associations. Moreover, a health-promoting, preventive and habilitative/rehabilitative focus in healthcare is necessary to improve the health of the population in the long term and, at the same time, use healthcare resources efficiently. It is also a prerequisite for good health for people living with chronic and long-term conditions. This is aimed at improving the population's health status and consequently reducing unnecessary hospital stays, especially for patients with chronic conditions who are at risk of recurring hospitalisations.
- ii. Another relevant matter within the reform is **accessibility** to healthcare services. Access to primary care affects the patients' experience of care and, by extension, their trust. Some regions have already undertaken measures to improve accessibility by using mobile teams to reach the patients, locating primary care services in particularly fragile areas, providing digital services for online consultations or moving specialised care to primary care centres. An integrated physical and digital way of working in primary care is particularly important to increase accessibility.
- iii. A person-centred approach is based on the patient's needs. To achieve that, an important prerequisite is to build **continuity** with a fixed doctor's contact, a fixed care contact or an entire care team with several different professions. The right place to build this relationship is the primary care centre, where the degree of continuity should be adapted to the patient's needs, conditions and preferences.
- iv. All care, and particularly primary care, should be based on respecting the patient's self-determination and integrity through consultation and **participation**, especially with the increase of chronic conditions and long-term treatments. This requires patients to be well informed and updated regularly, thus leading back to the role of collaboration among providers and continuity of care. In participation and co-creation of care, it is also of utter importance to include the perspective of families and carers of all ages.

⁴ SKR – Sveriges Kommuner och Regioner (2023). *Good and close care 2023. Transforming healthcare with primary care at its centre*. Agreement between the state and the Swedish Association of Local Authorities and Regions.

- v. Many of the challenges that primary care is facing, such as staff shortages and accessibility, are particularly evident in **remote and rural areas**. In fact, the northern countries are characterised by long distances and large sparsely populated areas that are likely to grow in the future. To meet these challenges, there is a need for new working methods and models – for instance, through digitalisation – that are based on local conditions.

These selected areas, to be strengthened in the next few years, are intertwined and interdependent. Collaboration among authorities and providers improves accessibility and facilitates continuity, while close services and accessibility are essential to enhance patients' participation both in urban and rural areas.

4.3. Healthcare trends and challenges

The literature review shows that, in Sweden, the overarching goals for the development of healthcare services are set at national level, while the responsibility of developing the methods for the accomplishment of such objectives lies with the regional and municipal governments. This has allowed the development of different organisational models and healthcare design solutions, in line with the national directives. For instance, recent projects in Jönköping have interpreted the concept of “close care” as “reaching people where they are”, namely where they carry out their daily tasks, to improve accessibility and support a more effective – hence appropriate and consistent – use of the healthcare services; other regions, such as Våstra Götaland, have increased their reliance on digital services through encouraging online consultations in those that have been defined “digi-physical” healthcare centres (e.g. Kallebäck healthcare centre, Öjersjö healthcare centre).

As far as the healthcare trends are concerned, a study on current issues concerning primary care centres carried out at CVA⁵ shows that the main factors to be considered as driving future changes and developments in primary care are: 1) increased digitalisation; 2) more specialised care in primary care (i.e. integration of primary and specialised care); 3) changes in work processes; 4) increased need for prevention and health promotion; 5) more mobile teams and home care; 6) increased cooperation among providers; 7) other developments such as demographic changes, pandemics, political governance, and so on. In this study, respondents could choose among some suggested options.

During the interviews conducted for this research, respondents were asked to mention the most prominent healthcare trends in relation to close care and some of them (=9) directly or indirectly referred to what they think will change and have an impact on healthcare design, according to their experience (Table 1). The most frequently raised trends were quite aligned with those reported by the abovementioned CVA study: i) increased digitalisation (=7); ii) increased need for continuity of care (=4); iii) increased need for health prevention and promotion (=4); iv) increased demand for healthcare (=3); v) increased home care (=3); vi) increased need for integrated care (=3); vii) increased need for co-location of services (=3); viii) renovation rather than new construction (=3); ix) increased cooperation among providers (=2); x) changes in working methods and environments (=2).

⁵ CVA – Centre for Healthcare Architecture (2022), *Pre-study for the Concept Programme. Primary care premises, with a focus on health and medical centres*. Programme for Technical Standards. <https://www.ptsforum.se/forskning/lokaler-foer-primaervard/>.

Table 1. The table summarises the findings regarding healthcare trends and challenges, showing the coding scheme and the frequency of code occurrence across the interviews.

Codes / Interviews	1	2	3	4	5	6	7	8	9	10	11	12	Tot
<i>Current HC trends</i>													
Increasing demand		x					x		x				3
More home care		x					x		x				3
Digitalisation of services		x		x	x	x	x	x				x	7
Continuity of care		x			x		x		x				4
Integrated care		x			x		x						3
Cooperation		x					x						2
Less space Co-location		x					x		x				3
Renovation		x					x		x				3
Health prevention/promotion		x		x	x	x	x	x				x	7
Working stations		x			x		x		x				4
<i>Current HC challenges</i>													
Lack of guidance					x		x	x					3
Slow process		x				x			x				3
Political decisions		x			x		x			x		x	5
Healthcare financing		x			x		x		x			x	5
Healthcare staff shortages		x		x	x	x	x						5
Cooperation						x	x		x		x		4
Different healthcare providers							x		x				2
Adapt to the context		x					x	x					3
Optimise space use						x			x			x	3

Throughout the interviews, several respondents shared the idea that one of the challenges in implementing close care is the lack of a clear definition for this concept. There appears to be uncertainty and ambiguity surrounding what close care entails and how it should be applied in practice. This is believed to be one of the reasons behind the limited number of concrete actions that have been following the introduction of this reform.

Currently, due to the consistent financial issues and shortages of staff, also mentioned by other respondents, in combination with the presence of multiple healthcare providers⁶, primary and specialised care tend to focus on providing a “narrower” range of services, specifically targeted to a smaller segment of the population and addressed to fewer health needs, which is leading to gaps in healthcare access and provision. In fact, the result is that there is an increasing group of patients, whose conditions are not too severe but cannot at the moment be easily handled by primary care, who is unsure of where to seek healthcare support, and may risk receiving care in the wrong setting. There needs to be more cooperation between primary and specialised care in order to guide the population to reach the right level of care.

Other challenges mentioned by the respondents are:

- *Healthcare financing* (=5) – due to the lack of financial flexibility, it is hard to be able to invest in primary care while coping with the pressure on acute care. Some respondents highlighted how investments in hospital care are still widely prioritised in comparison with those in primary care, while reinforcing that without substantial resources it will be hard to operate the desirable transition to close care.
- *Healthcare staff shortages* (=5) – there is a severe lack of healthcare staff, especially in rural and remote areas. Moreover, healthcare workers often choose to transition to entirely different fields after a few years in the healthcare sector.

⁶ In Sweden, there are multiple healthcare providers including private operators working for the regional healthcare system.

- *Political orientation and decisions* (=5) – the responsibilities and duties in the transition to close care are not quite clear yet. A shared understanding of which authorities should lead the change is still missing. In Sweden, both regions and municipalities are actors in healthcare provision, and increased collaboration among them would be required. However, who should run the premises where they share activities “under the same roof”?
- *Increased cooperation* (=4) – collaboration and cooperation among healthcare authorities and providers is still to be improved. This would allow for more integration between primary and specialised care, as well as a more efficient healthcare system. Sometimes, different providers own each one room of the same type, provided with the same medical equipment, but these rooms are seldom used during the week.

Other interviewees reported that other challenges might be the lack of guidance and steering along the transition process (=3), the slow pace of the transition (=3), the need to adapt solutions to different contexts (=3), the need to reduce and optimise the use of space (=3), and the presence of different healthcare providers (=2).

Regarding the latter, some regions have developed tools⁷ to support healthcare providers in quantifying their space needs through a data-driven approach, as it has been found that healthcare facilities are often oversized due to an initial belief that more space is needed, and the result is that it is often possible to observe that in public primary care centres many rooms remain unused and empty, even at the most busy times of the day, such as 10.00 in the morning.

5. Discussion

The findings have revealed that the question “what are the implications of the Nära Vård reform?” remains unanswered, or at least ambiguous, for now.

Due to the lack of general guidance on “how” to implement the transition towards close care, the reform of the healthcare service and facilities is undergoing an “experimental” phase. In the past years, the national government’s proposition has given rise to different regional initiatives. In fact, the organisational structure of the Swedish healthcare system caters for regional and individual projects’ solutions in response to the challenge of bringing care “closer” to the patients. Each region has developed new models of care and new typologies of healthcare facilities, which have evolved differently across the country reflecting diverse interpretations of the national objectives. In addition, by not setting national standards and models, the reform grants the freedom to interpret the implications that the propositions have on design and space. As a consequence, the solutions displayed in different parts of the country have shown a high degree of customisation and adaptation, according to local needs and circumstances [22].

In this current and ongoing phase, the development of a considerable number of different experiences can be viewed as beneficial, in the initial stage of the reform

⁷ The tools consist of a series of Excel sheets that guide users from the input data (i.e. number of expected planned and unplanned visits per day, number of visits per room on a daily and weekly schedule, distribution of visits over the year), and calculate an output data that corresponds to the required number of rooms for general specialities. For other specialised rooms these criteria do not apply (e.g. gynaecological room, eye/ear infection room), as they should be planned regardless the number of visits. Therefore, the total number of consultation rooms is calculated by adding the number of specialised rooms to the calculated number of general rooms.

implementation. This diversity of case studies allows for a broader understanding of the advantages and drawbacks of each solution and will possibly enable more effective development of future projects.

At the same time, the developments of close care in Sweden show that, by not setting national standards and models, the solutions proposed in different parts of the country produce a high degree of customisation, according to local needs and circumstances. This reinforces the idea that there is no “one-size-fits-all” solution for close care, and that each approach should be tailored to the community the design aims to serve. The focus should shift, instead, towards “whom” care needs to get closer to, and in which way their needs and preferences can be understood to target the design effectively, fostering a sense of ownership, belonging and empowerment. In order to achieve this, actively listening to the community becomes key.

As far as other contributing factors are concerned, the study was in line with previous research in the identification of digitalisation as the main impactful change. In general, it is believed that digital services can help deal with other areas of improvement, such as accessibility of care and healthcare shortages in rural and remote areas via online meetings, as well as collaboration among healthcare providers and consistency in patients’ care pathways thanks to the opportunity to share data.

In fact, staff shortages and poor cooperation are perceived as significant challenges. Staff shortages needs to be systematically addressed at a national level; however, strengthening primary care could provide more job opportunities that are different and with varying conditions, thereby offering healthcare workers alternative career paths within the healthcare sector. Poor cooperation should be addressed in a patient-centered care perspective, to improve high-quality, continuous and consistent care tailored to individual needs. In addition, making an effort to establish a dialogue and collaboration among providers could result in the shared use of rooms and functions within healthcare premises, thus leading to resource-efficiency. In this respect, offering providers a tool to accurately calculate the required number of rooms based on their production planning and weekly schedules may help achieve space optimisation and cost-efficiency.

6. Conclusions

The diversification of projects and experiences related to the Swedish healthcare developments presents an opportunity to analyse different organisational as well as design solutions. Consequently, to capitalise on this potential, these independent developments should be supported and complemented by a consistent knowledge exchange among the healthcare and healthcare design actors. This would allow to optimise the new healthcare models by drawing from previous experiences and incorporating best practices.

This collective learning process would entail planning and implementing a systematic evaluation programme of the ongoing experiences, aimed at assessing the performance and effectiveness of each approach, providing valuable insights into their strengths and areas for improvement. In this context, the development of specific evaluation tools, such as building performance and post-occupancy evaluation tools, becomes essential to generate new knowledge that can be integrated in the design process. This will support improvement of decision-making, programming and enhance the performance of the built environment, both in the national and international context.

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