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Moving Healthcare into the Patient's Home

A Comparative Study on how Different Hospitals Across the World Organise Their Hospital at Home Programs

Master's thesis in Quality and Operations Management

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Abstract

Hospital at Home is a healthcare concept that has grown in recent years and as the programs develop, organisational and structural questions become increasingly important. This study explores three Hospital at Home programs across different settings, NUHS@Home in Singapore, HSU Home Hospital in Iceland, and AP-HP HAD in France. The study is based on a literature review and semi-structured case interviews with people working within these three programs, as well as additional informant interviews with people working in some capacity with HaH-programs. The findings indicate that a suitable way of organising HaH-programs depends on the context and is shaped by local conditions, history, resources, and organisational structures. The shift of healthcare from hospital to patients' homes also requires a shift in how care is delivered, as it is not simply a matter of transferring existing processes and routines to the patient's home, but rather redesigning the way care is provided. This change also increases the importance of collaboration and coordination between different actors within the healthcare system. In addition, organisations must balance differentiation and integration between the program and the hospital to support HaH-specific conditions while ensuring effective integration with the existing healthcare system.

Keywords: Hospital at Home (HaH, H@H), Hospital in the Home (HITH), Organisational structure, Coordination, Differentiation, and Integration

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Glossary

Below is the list of words that have been used throughout this thesis listed in alphabetical order:

Admission Avoidance	Preventing hospital admission by treating patients outside of the hospital
Care pathways	Structured routes that patients follow through the healthcare system
Command center	A central coordination unit managing patient flow, monitoring, and clinical oversight
Early Supported Discharge	Discharging patients earlier from hospital to continue care at home
Geriatric care	Healthcare focused on older adults, often addressing complex, chronic, and age related conditions, including multimorbidity.
Hospital at Home (HaH)	Acute hospital-level care delivered in patients' homes or in nursing homes
Hub-and-spoke model	A structure with a central coordination unit and distributed care units
Inpatient care	When patients have conditions that requires admission to a hospital to stay overnight
Outpatient care	Refers to any procedure, consultation, treatment or other service that does not require an overnight stay at a hospital
Palliative care	Healthcare focused on improving quality of life for patients often at the end of life, focusing on symptom relief and comfort
Primary care	First line healthcare services providing general medical care and coordination
Remote monitoring	Monitoring patients' health data from a distance using digital tools

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Introduction

This section presents an overall background of the research topic and highlights the identified problem, purpose of the study, as well as the research questions addressed in this thesis.

1.1 Background

Demographic changes, in combination with an increased prevalence of chronic diseases and multimorbidity, pose a significant challenge to healthcare systems worldwide. Vale et al. (2020) argue that addressing growing healthcare demands, rising costs, and limited resources is an extreme challenge for most healthcare systems. An increasing number of frail older patients with complex care needs is placing increased pressure on the acute inpatient care, which raises concerns that current models of hospital-based acute care may become increasingly difficult to manage as the demand continues to grow.

To address these challenges, the need for alternative care models has become increasingly important. An example of such a model is Hospital at Home (HaH), which Ko et al. (2025) describe as a model which substitutes traditional inpatient care with treatment delivered in the patient's home. Patients receiving care through HaH would otherwise have been admitted to a hospital. The model provides hospital-level services, such as intravenous therapy, in the patient's home through virtual or in-person daily visits, with continuous access to healthcare staff, often supported by digital monitoring systems (Ko et al., 2025).

In recent years, HaH models have expanded globally and become increasingly established within healthcare systems, particularly after the COVID-19 pandemic. Increased pressure on hospital capacity, shortages of inpatient hospital beds, and the need to minimise hospital-based exposure highlighted the importance of alternative care models. In addition, technological advancements, such as remote monitoring and portable medical devices, have further facilitated the development of HaH.

However, the concept of Hospital at Home care was first introduced in France during the 1960s and has since evolved and been implemented in several countries, including Spain, the United States, Singapore, and Sweden (Morris, 1983; Smith, 2024). The first HaH-program in Sweden was launched in 2021 at Skåne University Hospital. Since then, several hospitals have initiated the development of similar models (Smith, 2024). The model has gradually developed from early local initiatives into more structured forms of home-based acute care across different healthcare systems.

In Sweden, Socialstyrelsen (2026) highlights HaH as an essential part of efforts to reduce

hospital bed shortage. Socialstyrelsen further emphasise the need for a transition in which home-based care replaces certain hospital interventions in order to provide cost-effective care while maintaining or improving quality. However, variations in terminology and differences in the interpretation of regulations create challenges. Even established concepts are interpreted in different ways, which leads to a lack of consistency (Socialstyrelsen, 2026).

1.2 Problem Formulation

Despite the recent development of HaH, the model of care still only represents around 0,2 percent of the inpatient hospital care in Sweden, while Smith (2024) argues that as much as 10-25 percent of all inpatient care could potentially be provided in the home. This discrepancy between current capacity and estimated potential, indicates a need for further research on how HaH can be scaled within healthcare systems. However, previous research has focused on clinical outcomes, patient satisfaction, and cost effectiveness of HaH compared to traditional inpatient hospital care. Less research has been conducted on organisational aspects and scaling challenges of such models. Lai et al. (2024) argue that while early implementation strategies are relatively well examined, empirical evidence on how HaH services can grow beyond the pilot phase remains limited.

This highlights a gap in the literature, indicating a need for further research in order to fully understand how alternative care models, such as HaH, can be effectively scaled and integrated within healthcare systems to reduce pressure on traditional inpatient hospital care. This gap becomes especially relevant for organisations that are currently in the phase of expanding their HaH-related initiatives. One example is Sahlgrenska University Hospital in Gothenburg, where hospital-based care is organised under the umbrella term “Sahlgrenska Hemma”. The project was initiated in 2023 and has since gradually expanded through smaller pilot projects and local initiatives, where many departments at the hospital are running their own initiatives independently from each other (Peters et al., 2025).

This continued growth of Sahlgrenska Hemma raises organisational questions about how these activities should be effectively organised and coordinated. This underscores the need for a deeper understanding of organisational aspects when expanding HaH-programs, and how to better support coordination and integration within the healthcare system. However, as mentioned above, the development of HaH in Sweden is still in an early stage, with limited available data and practical experiences. Therefore, insights from other parts of the world with more established or differently organised HaH-programs enable a broader comparative perspective.

1.3 Purpose

The aim of this study is to examine how three international hospitals have organised their HaH-program, and how they have addressed different organisational challenges, especially as these programs grow. The study is complemented by informant interviews to provide additional perspectives. By analysing different organisational strategies used by these hospitals, the study aims to identify similarities and differences between the programs and gain insights into important aspects when organising and scaling HaH-programs.

1.4 Research Questions

The study aims to answer the following two research questions:

1. How are three different hospitals across the world organising their Hospital at Home programs?

2. What aspects are important when organising and scaling HaH-programs?

1.5 Delimitations

This study is limited to three HaH-programs operating in high-income countries with well established healthcare systems. This was considered to be most transferable to Scandinavian settings. An additional delimitation is that the study only explores organisational aspects of HaH-programs rather than clinical aspects. This is because the study is being conducted from an organisational rather than a medical perspective. The perspective of patients and their relatives were also excluded.

2

Theoretical Framework

The theoretical framework provides an overview of the Hospital at Home model and relevant organisational theories. The aim is to get a deeper understanding of the model and to gain a theoretical basis useful when analysing the empirical findings. The section begins with an introduction of relevant concepts in Hospital at Home to create a basic understanding of the phenomenon. Following that, the dimensions characterising different HaH-models are presented, which is relevant to understand when comparing different models. The following section outlines technological and organisational prerequisites to manage a HaH-program. After that, important aspects related to scaling HaH-programs are introduced to give an understanding of requirements and challenges to expand such programs. Lastly, a theoretical background to differentiation and integration is provided to facilitate the analysis of organisational coordination since hospitals are large and complex organisations.

2.1 Concepts in Hospital at Home

In the literature, several different terms are used to describe hospital-level care provided in the patient's home, including Hospital at Home (HaH), Hospital in the home (HITH), mobile care, and virtual wards. These terms are sometimes used synonymously, as for example described by Shi et al. (2024) that the term virtual ward has historically been used somewhat interchangeably with the term Hospital at Home. As these different terms refer to slightly different models of care, their interchangeable use can be problematic resulting in ambiguity and challenges when comparing different programs with each other. To address this problem, an international consensus definition of Hospital at Home was presented at the World Hospital at Home Congress (WHAHC) 2023 in Barcelona. The aim was to establish a shared reference point by using the same terminology and ensure a common understanding of what HaH is, across national boundaries. In addition, the intention was that it should reduce the variation between individual healthcare systems and enhance their comparability. The definition, presented by Professor Michael Montalto on behalf of Scientific Committee of WHAHC, is as follows: "Hospital at Home/Hospital in the Home (HaH/HITH) is an acute clinical service that takes staff, equipment, technologies, medication and skills usually provided in hospitals and delivers that hospital care to selected people in their homes or in nursing homes. It substitutes for acute inpatient hospital care."

Hospital at Home is often divided into two main types: Early Supported Discharge (ESD) and Admission Avoidance (AA). Early supported discharge aims to shorten the length of a physical hospital stay by enabling earlier discharge (Smith, 2024). This takes place at

the hospital during inpatient care, which is defined as healthcare provided when a patient is admitted to a hospital ward (Ch. 2, § 4, Hälso- och sjukvårdslag [Health and Medical Services Act; HSL], 2017). Admission avoidance aims to avoid admission to a physical hospital and can be achieved through three main clinical pathways: hospitals, primary care or prehospital care. Patients can be admitted through the hospital, either via the emergency department or outpatient care (Smith, 2024). Outpatient care refers to healthcare that is provided outside inpatient hospital care (Ch. 2, § 5, HSL, 2017). Admission can also occur through primary care. Primary care is defined as healthcare services that provide outpatient care without restrictions regarding diseases, age or patient groups (Ch. 2, § 6, HSL, 2017). Lastly, admission avoidance can be achieved through prehospital care, which is provided either before or during transport to a hospital, including services such as ambulance and mobile community healthcare teams (Smith, 2024).

2.2 Dimensions of HaH-programs

Although HaH-services have a long history and have developed over several decades, there is still no comprehensive structure that clearly describes and captures all the various aspects included in such a care model. Ghapanchi et al. (2025) argue that there are significant differences between different HaH-programs in terms of delivery models, technology requirements, and target populations. Delivery models range from having mostly in-person care to primarily virtual interactions, while technology differs both in the amount of heavy specialised care equipment and in the degree of comprehensive platforms in different programs. The target population in HaH-programs is often based on condition, age or care settings. Denecke et al. (2024) also identify the challenge of comparing HaH-programs and, therefore developed a framework for describing different HaH-models. To develop the framework, a total of 42 articles were reviewed and similar information was grouped into themes which later formed different dimensions that make up the framework. It consists of nine different dimensions: persons involved, service delivery, reimbursement model, first point of contact, data collection, target population, technology involved, quality, and intended outcome. Each dimension is further divided into smaller subcategories that describe in more detail what is captured within each dimension. The framework can be used for several different purposes. Potential purposes mentioned in the paper include comparing existing HaH-models, guiding decision-making, planning, development, and implementation, and it may also be used as a support in developing new technologies or interventions to improve HaH-services (Denecke et al., 2024). The framework, with its different dimensions, highlights the complexity and multifaceted nature of HaH and indicates that the care model involves more than simply moving care from the hospital to the patient's home. It encompasses several other different aspects that require a rethinking of how care is delivered and organised when it is provided in the patient's home. One example mentioned by Ko et al. (2023), is that some participants in a HaH-program lifted that in-person visits early in the morning and late at night inconvenienced and disrupted the families normal routines. Another problem lifted in the study was communication between third-party community services and the hospital-based care team.

There is considerable variation in the medical conditions included in HaH-programs across different healthcare systems and models, with a more general approach such as the Mayo Clinic's Advance Care at Home (ACH) (Paulson et al., 2023) or more specialised ones such as the Huntsman at Home program, which is aimed at oncology patients (Titchener

et al., 2021). However, several conditions are consistently represented in the literature and appear more frequently. Acute and chronic medical conditions, often involving geriatric patients, typically characterised by multimorbidity and complex care needs, are represented across studies by Paulson et al. (2023), Shepperd et al. (2016), and Lin et al. (2024). Infections, such as pneumonia and septicemia, oncological conditions, and chronic obstructive pulmonary disease (COPD) are also consistently included in the patient population. Cardiovascular diseases, particularly heart failure, were also identified in the study by Paulson et al. (2023). Lin et al. (2024) also included orthopedic conditions, which were not reported in the other studies. Additionally, palliative care and psychiatry are also included in some HaH-programs (ANAP, 2025). This variation in patient population and medical conditions across different HaH-programs is also described by Smith (2024). Nevertheless, the author argues that some common underlying principles still exist. One of these principles is criteria-based inclusion, including both social and medical factors, which is used to determine patient eligibility for HaH-services. Some commonly occurring criteria are identified through a literature review by Denecke et al. (2024). It can for example be patient demographics, specific medical conditions, and the ability to receive support from informal caregivers such as family and friends. Management should consider which the target population is when choosing a HaH-model, according to Ghapanchi et al. (2025). In addition, management should also consider the available resources, economic trade-offs between different models, the specific context in which their healthcare organisation operates, and what the strategic priorities are.

2.3 Technology and Organisational Support

In the study by Purarjomandlangrudi et al. (2025), several aspects were identified for the governance and management of HaH. One aspect was how technology can support and facilitate providing care in patients' homes. With digital technologies, such as video consultations and remote monitoring, physicians could extend their geographical reach, which is especially important in rural areas. Video consultations were also shown to provide more confidence in the examination and care plan compared to only telephone visits, while remote monitoring could expand patient eligibility. The use of remote monitoring and video consultations, together with centralised command centers, might help maintain consistent patient volumes. Ghapanchi et al. (2025) argue that a centralised command center can require a higher upfront investment, while providing economies of scale when delivering care to sufficiently large populations, which could fit organisations that want to provide care across large geographical areas. The authors also propose a hub-and-spoke model for organisations prioritising integration with existing systems, as it supports both gradual scaling and integration.

Purarjomandlangrudi et al. (2025) also lift the role of education and staff. It was identified that clinicians experienced in working with home-based care were better at selecting appropriate patients for HaH-care than hospital ward clinicians, and that care quality can be enhanced by centralising training in regional hubs, while having routine follow-ups for the education locally. It was also found that cross-sector collaboration improved continuity of care, and for the HaH-model to achieve long term viability, care models and workforce competencies need to be embedded in sustainable organisational structures.

2.4 Scaling HaH-programs

In the context of scaling HaH-programs, Newton et al. (2024) identify several barriers and facilitators. One aspect being highlighted is the need for partnership with external services such as community general practices, primary care, nursing homes, ambulance services, and urgent care. These partnerships were seen as critical for coordination and integration of services but also for raising awareness of the HaH-program and increasing referrals to the HaH-program. To enhance collaboration between different services, a system in which staff, for example, split their time between the emergency department and the HaH-program may help. Furthermore, with these partnerships, it is easier to define the goals and objectives of the HaH-program, therefore enabling the program to be positioned where it is most useful while not duplicating other existing health services (Newton et al., 2024).

Newton et al. (2024) also note that core qualities needed in HaH-programs are flexibility and adaptability. In addition, they identify a need for targeted education on virtual care content in university programs. Lastly, a barrier identified was the lack of automatic integration between different systems such as remote monitoring and electronic medical record or the lack of interoperability between different clinical information systems (Newton et al., 2024). Similarly, Purarjomandlangrudi et al. (2025) note that an integrated electronic system can lead to better coordination between services.

2.5 Differentiation and Integration

According to Galbraith (1971) and Youker (1977), there is no such thing as a perfect organisational design, as each design has its own advantages and disadvantages. Lawrence and Lorsch (1967) argue that organisations must adapt their structure to its environment, which supports the idea that there is no appropriate organisational structure for all contexts. The authors further describe an organisation as a system composed of interconnected behaviors of people working together on a task that has been divided into multiple different subsystems, where each subsystem performs a certain part of the task. This division of tasks can be described as a way of grouping similar activities and functions together, which according to Galbraith (1971) facilitates resource utilisation which in turn enables easier sharing of the same resources across different processes. According to Galbraith (1971), this also creates a clearer structure and career path for specialist expertise, which makes it easier for companies to hire, train, and retain specialists.

Lawrence and Lorsch (1967) define this division of an organisational system into different subsystems as differentiation. The authors further argue that each subsystem is influenced by its own external environment and therefore tends to develop different attributes, such as structures, working methods, goals, and priorities. Four specific attributes were identified in the study, although there exist many others that could be related to the environment. Two of the attributes are the degree of formalised structure and the goal orientation of members. The degree of formalised structure is based on the assumption that the greater the certainty of a subenvironment, the more formalised the structure of the subsystem. This implies that a subsystem with more predictable and routine tasks benefits from a clearer and more formalised structure, while subsystems working with more uncertain and complex tasks require flexibility and less formalisation. The idea of the attribute related

to the goal orientation of members is that members of a subsystem tend to prioritise goals relevant for their particular subenvironment. For example, marketing managers may prioritise goals related to the customer and competitors, while production executives could be more focused on equipment and suppliers (Lawrence and Lorsch, 1967).

The idea is that the more complex an organisation is, the more differentiated it becomes. However, when the organisation becomes more differentiated, conflicts may arise between the different subsystems. Lawrence and Lorsch (1967) suggest that there could be problems in achieving coordination when different clusters of roles are developed in relation to differentiated tasks. The authors further emphasise that there is a relationship between the degree of which members of two separate groups share norms, values and/or goals, and the ability of the two groups to collaborate. Similarly, differences in the perceptions of reality can result in conflicts arising. This is further supported by Youker (1971), who states that organisations that are grouped into different subsystems may place a greater emphasis on their own areas of specialisation rather than on the overall organisational goals. This illustrates the need for mechanisms that can coordinate differentiated subsystems and align them with the overall goals.

Lawrence and Lorsch (1967) describe this need for coordination mechanisms as integration. Integration is defined as the process of achieving unity effort among the different subsystems in the accomplishment of the organisation's task. The authors suggest that the more differentiated an organisation is, the greater is the challenge to effectively integrate its subsystems. They further argue that when the environment requires both a high degree of differentiation and a high degree of integration, integrative devices will tend to emerge. These integrative devices must function effectively and are necessary to ensure overall organisational performance. Three different mechanisms for achieving integration mentioned in the study are through hierarchy, administrative or control systems, and voluntary activities. Voluntary activities are here referred to informal coordination between people in the organisation, supplementary to hierarchical and administrative systems. According to Lawrence and Lorsch (1967), the increasing number of coordinating departments, task forces, and cross-functional coordinating teams is an indication that integration mechanisms are emerging to achieve integration.

3

Methodology

The following chapter describes the overall research strategy, design, and methods that were used in the thesis followed by an evaluation of the quality of the research.

3.1 Research Strategy

According to Bell et al. (2022) a research strategy is an overall approach on how to conduct business research. Furthermore, two general approaches are presented by the authors: quantitative and qualitative research. Quantitative research focuses on numerical data, and therefore enables a quantification of the data analysis. Usually quantitative research is conducted with a deductive approach in regards to theories, which means that existing theories are tested against empirical data. Common data collection methods are structured interviews and self-completing questionnaires, but also structured observations and content analysis. In contrast, qualitative research focuses on words and images rather than numbers when collecting and analysing data. Bell et al. (2022) also state that an inductive approach is typically used in qualitative research. Instead of testing existing theories, an inductive approach is used to create theories from empirical data. Common data collection methods in qualitative research are qualitative interviewing, ethnography or participant observation and analysis of texts, documents, and visual materials.

To ensure that the research will generate valuable knowledge and that the assumptions are consistent through the research, Bell et al. (2022) recommend a basic understanding of ontology, epistemology, and methodology. According to Bell et al. (2022), ontology is the study of how to understand a social phenomena that is being examined. Often in qualitative studies, a constructionist view is used, which means that social phenomena arise and are made real through interactions of people and the meaning that the observer attaches to those interactions, or in other words, the society is created by interactions between people. This is followed by epistemology, which refers to the area that studies knowledge. In qualitative studies with ontological view as constructivism, the epistemological position is generally interpretivism. Interpretivism is the position that knowledge is created through interpreting how individuals understand and make sense of the social world.

Because of the explorative nature of the research questions, together with limited theories in the area studied, a qualitative approach with inductive reasoning was used. However, as Bell et al. (2022) state, the generalisation of theories when using an inductive research strategy is not always possible.

3.2 Research Design

Bell et al. (2022) describe the research design as a framework that provides the overall structure that links research questions to decisions about how to collect and analyse data. The authors discuss five general research designs, of which this study adopted a comparative design. A comparative design studies two or more contrasting cases using more or less identical methods. When different cases or situations are being compared, a better understanding of a social phenomena can be gained (Bell et al., 2022). In this study, a comparative design was applied to three different international hospitals in order to understand how their HaH-programs are organised. This comparison generated insights into how the programs differ in terms of organisation, and the importance of the context in which the program operates.

The selected organisations included in this study are the National University Health System (NUHS) in Singapore and two European hospitals, one located in France and the other in Iceland. These organisations were chosen because they represent different healthcare systems within distinct geographical and cultural contexts. They are at different stages in the development of their HaH-models. France introduced their first model in the 1960s, followed by Singapore in 2020 and Iceland in 2024. When searching for scientific documents in different databases, a large number of reports related to Singapore can be found, whereas fewer are available about HaH in France. This suggests that HaH in France may be relatively underexplored and therefore interesting to investigate. Iceland was selected based on the assumption that its organisational and environmental context has similarities with Sweden, which increases the potential for transferable insights into the Swedish healthcare system.

3.3 Research Methods

The primary research methods that were used in this study to collect and analyse data are literature review and interview.

3.3.1 Literature Review

A literature review is a structured review of existing research within the chosen topic to create a theoretical basis for the study. Through the literature review, the research questions and design can be motivated and by identifying what is already known and what is not within the topic, the relevance of the study can be strengthened. A literature review also enables new discoveries which may lead to the research question being developed and refined, which is especially suited for a qualitative research with an inductive approach (Bell et al., 2022).

The literature review was primarily based on articles that were found through online databases, mainly from Scopus. Citation chaining was also used to identify additional relevant articles by examining the references of key papers. The aim was to map the current research status of Hospital at Home and to identify relevant theories that later were used to understand and analyse the empirical findings. Furthermore, complementary background information about the hospitals and their HaH-programs in each specific country were also a part of the literature review, which is presented together with the

interview results.

3.3.2 Interviews

According to Bell et al. (2022), interviews are the most widely used method in qualitative research. The two main types are unstructured interview and semi-structured interview, which are sometimes grouped under the term qualitative interviews. Qualitative interviews differ from quantitative interviews in the way that they generally are more unstructured and flexible. Qualitative interviews have typically more open and general questions, which allow the interview to be based to a greater extent on the interviewee's perspective. In unstructured interviews, the conversation is guided by broad themes rather than predetermined questions, while semi-structured interview is based on an interview guide with predetermined questions. However, the interviewer has the opportunity to ask spontaneous follow-up questions and adapt the interview based on the interviewee's responses (Bell et al., 2022).

In this study, semi-structured interviews were conducted, both informant and case interviews. The majority of informant interviews were held in the beginning of the data collection process with an exploratory purpose, aiming to develop a clearer understanding of the research topic. However, these interviews proved to have important insights and were therefore also used to give complementary perspectives to the case interviews in the discussion. The insights from these interviews were also used, together with ideas from the comprehensive framework for HaH-models by Denecke et al. (2024), to develop an interview guide for the case interviews. During the case interviews, in-depth investigations were conducted for the three different cases, which were later analysed and discussed within the comparative study. In one of the cases, an initial informant interview was conducted with the interviewee. However, as this interview was considered particularly informative and provided valuable insights, it motivated a more in-depth analysis of that specific hospital's HaH-program and was therefore later developed into a case interview. The interview guides can be found as appendixes.

The participants for the interviews were selected through a purposive sampling method. Purposive sampling is a non-probability form of sampling, meaning that the sample is not a random sample, instead the participants are selected in a strategic way so that those selected are relevant for the study (Bell et al., 2022). The two purposive approaches that were used in this study were snowball sampling and criterion sampling. Bell et al. (2022) describe criterion sampling as a method where participants are selected based on whether they meet specific predetermined criteria, which in this study were people who have some degree of experience working with HaH, reflecting the exploratory nature of the study. In contrast, snowball sampling begins with an initial contact with a small group of participants, who are then used to establish contact with other relevant individuals (Bell et al. (2022). All participants for the informant interviews are presented in table 3.1, while participants for the case interviews are presented in table 3.2.

Table 3.1: Informant interviews

Name	Position
Carsten Schmid	Head of Sales and Marketing at NursIT; Board Member of the German Hospital at Home Society
Anonymous	Director of Development at a Hospital in Västra Götalandsregionen
Cécile Bordenave	Hospital at Home Expert at the National Agency for Health and Medical-Social Performance
Emilie Lebee Thomas	Head of International Monitoring of Healthcare at the National Agency for Health and Medical-Social Performance
Nirit Pilosof	Head of Research in Healthcare Transformation at Sheba Medical Center
David Nicolás Ocejo	Hospital at Home Medical Coordinator at Hospital Clínic de Barcelona

Table 3.2: Case interviews

Name	Position
Johnny Chan	Operations and Administration Lead at NUHS@Home
Guðný Stella Guðnadóttir	Chief of Geriatric Medicine at the Health Care Center of South Iceland, Director of Selfoss Hospital at Home-program
Niccolo Curatolo	Director of Operations, Pathways, and Development at Hospitalisation à Domicile AP-HP

In total 9 interviews were conducted. A joint interview was conducted with Cécile Bordenave and Emilie Lebee Thomas and two different interviews were held with Guðný Stella Guðnadóttir on separate occasions. The informant interviews lasted approximately 45 minutes, and the case interviews had a duration between 1 and 1,5 hours. All the interviews were held remotely via Microsoft Teams and the participants gave their consent to record the interviews. They were also asked about permission to use their names in the thesis. The interviews were then transcribed, which was done shortly after the interview was completed to prevent information from being lost or distorted.

The data were analysed using a thematic analysis, where each interview was color coded and later sorted into different themes. The authors alternated in coding the interviews, which were then discussed together to ensure that all relevant aspects were captured. For the informant interviews, recurring topics such as staffing, education, internal support, external collaboration, financial aspects, technology, interoperability in software, redesign of the service, and awareness of the program were identified and color coded. These codes were subsequently grouped into broader themes, such as financial, organisation, technology, and care redesign. Similar topics as in the informant interview were also identified in the case interviews. However, additional topics related to the specific care model used in the program were also identified. This resulted in three main themes: background, care model, and organisation. The thematic analysis facilitated the process of summarising the empirical material. In the discussion, a comparison between the three

main case studies was conducted, while additional insights from the informant interviews were used to further support the analysis and identify important aspects.

3.4 Research Quality

To ensure research quality, different evaluation criteria can be used depending on the research approach. In quantitative research, three commonly used criteria are reliability, replicability and validity (Bell et al., 2022). Reliability refers to which extent the results of the study are consistent, meaning if the use of measurements and concepts are consistently used throughout the study. Replicability refers to the extent to which researchers describe their processes and methods in sufficient detail to facilitate the replication of the study. This is essential for ensuring the credibility of the results, as replication of the study should yield consistent findings. This criteria ties in with reliability, as the reliability of the measures cannot be assessed if the research procedures are not explained in a way that enables replication. Validity concerns to which degree the findings and conclusions of a study accurately represent the reality or phenomenon being studied.

However, in qualitative research, alternative criteria can be used to assess research quality. According to Bell et al. (2022), Guba and Lincoln proposed the concept of trustworthiness as a criteria for evaluating qualitative studies. Trustworthiness consists of four criteria: credibility, transferability, dependability and confirmability. The concept of trustworthiness was introduced partly as a response to the critique that traditional quantitative quality criteria assume that there is a single objective truth about the social world. In contrast, qualitative research often focuses on the individual's experiences and interpretations of reality. Therefore, the concept of trustworthiness is considered more appropriate for assessing the quality of qualitative research.

To establish credibility, the study should be conducted according to good research practice and the researchers interpretations can be verified by presenting the findings to participants to confirm that their perspectives have been accurately understood. This is often combined with triangulation to ensure credibility. Transferability is about providing enough details through a thick description of the study in order for other people to make judgments about the transferability of findings. Dependability involves keeping complete records of the researching process, such as problem formulation, selection of research participants and interview transcripts. Which peers then would be able to audit in order to assess that proper procedures have been followed. However, this approach to ensure dependability can be challenging to implement in practice, as it requires significant time and effort from external auditors. Lastly, confirmability is about recognising that absolute objectivity is impossible in business research, but it should be apparent that the researchers have not allowed personal values or theoretical perspectives to shape the research process and findings (Bell et al., 2022).

To ensure trustworthiness of this study, the participants of the interviews were asked to review the key findings of their own interviews. However, this can lead to censorship but also be necessary in order to use participants name and position. Triangulation was also used in order to cross checking findings from different types of sources. In this study, triangulation was done through comparisons between data from literature review, interviews, and hospital websites. Detailed descriptions of the study's context and the participants were used in order to strengthen the study's transferability and credibility.

Direct quotes from interviews together with a transparent record of the data collection and data analysis were used to raise the dependability and confirmability of the study.

3.5 Use of Artificial Intelligence Tools

In this study, AI tools such as ChatGPT were mainly used to support language editing and grammatical improvements in order to improve the readability and clarity of the text. AI tools were not used to generate ideas, conduct discussions, or draw any conclusions.

Microsoft Word's transcription function was also used to transcribe all interviews. The generated transcripts were then reviewed shortly after each interview by a researcher while listening to the audio recordings to ensure accuracy and to correct any potential transcription errors or misinterpretations. Any unclear sections were manually revised by the authors. All interpretation, coding, analysis, and presentation of the findings were conducted solely by the authors.

4

Results from Informant Interviews

This section aims to present key findings from the informant interviews. The following provide a presentation of the interviewees, all working with HaH-programs in different capacities:

Carsten Schmid (Personal communication, 25 March 2026) is currently working at a medtech company that provides platforms for hospitals and also has modules adapted to HaH-care. Furthermore, Carsten Schmid is also a member of the relatively newly established board of the Hospital at Home Society in Germany.

Cécile Bordenave and Emilie Lebee Thomas (Personal communication, 1 April 2026) both working for the National Agency for Health and Medical-Social Performance in France, where Cécile Bordenave is an expert on Hospital at Home and Emilie Lebee Thomas is the Head of International Monitoring of Healthcare.

Nirit Pilosof (Personal communication, 7 April 2026) has a PhD in architecture and had a postdoctoral position at the University of Cambridge, the business school. Today, Pilosof is working as Head of Research in Healthcare Transformation at Sheba Medical Center and is currently working with an international research project called "Aging Right Care(fully) (ARC)" together with collaboration partners in Sweden and the Netherlands.

David Nicolás Ocejo (Personal communication, 20 April 2026) is an internal medicine physician and works as a Hospital at Home Medical Coordinator at Hospital Clínic de Barcelona.

4.1 Financial Aspects

A recurring theme of the interviewees were the financial aspects of creating and running different HaH-programs. Several of the interviewees highlighted how the financial aspect is one of the main challenges to getting these programs working. With questions such as "How do we make the service affordable and economical so there can be real interest in scaling the service? What role does the insurance company have?". Cécile Bordenave and Emilie Lebee Thomas lifted how HaH-programs in France are appropriately reimbursed, however, when HaH is linked to a brick-and-mortar hospital, any surplus from the HaH-program may be absorbed by the wider organisation rather than being reinvested in the program. In contrast, the independent HaH-programs in France have the opportunity to reinvest in technology and staffing making them more dynamic, if the program is big enough to be effective.

Another point lifted by Cécile Bordenave, Emilie Lebee Thomas, and David Nicolás Ocejo

was that there is a need to incentivise the healthcare system to choose HaH for patients if they are a fit. Cécile Bordenave and Emelie Lebee Thomas talked about how it is paid more to have patients in the brick-and-mortar hospital and therefore hospitals are slow to develop HaH, but also that there is currently a competition over patients between the wards and the HaH-program. David Nicolás Ocejo lifted what he called "free bed syndrome", meaning that there is a fear in hospitals that if the wards have free beds, the ward is going to receive less resources allocated, which in turn can stop wards from referring patients to the HaH-program, which in turn means that it is a competition over patients. David Nicolás Ocejo also mentioned that Clínic de Barcelona, parallel with their HaH-program, has a program called Home Day Hospital, which is a program for outpatient care in patients' homes. The reason to have them separated is based on financial aspects, because it is the same team working in both programs.

4.2 Organisational Aspects

A majority of the interviewees mentioned the differences it can make to have support from management, with the belief of, in order to succeed with a HaH-program, it helps if the management have set clear goals, and are willing to invest in the program. One aspect Cécile Bordenave lifted is that it could be beneficial if the Ministry of Health establishes nationwide goals in regards to HaH-care. Nirit Pilosof argued that if the management is leading in a direction, the nurses and doctors understand that they need to follow, if that is in the organisation's culture, otherwise it could lead to resistance. Nirit Pilosof also mentioned how important it is to find champions, who can lead and manage the resistance from the medical professionals. Furthermore, Pilosof explained that when Sheba MC started their HaH-programs, each unit had the responsibility over both patients in the wards and patients at home. When it was successful, Sheba MC decided to centralise the different HaH-programs, and open Sheba Beyond. Sheba Beyond were responsible for all the different HaH-programs, with their own nurses and telemedicine but soon realised that it came with challenges and did not work effectively. Therefore, Sheba MC went back to each unit having responsibility over their patients, while Sheba Beyond is managing and providing the technology, logistics, paying for the manpower while the care is provided by the units.

One interviewee also mentioned how significant it was to have committed co-workers and wards when starting to work with HaH. David Nicolás Ocejo attributed some of the success of their HaH-program to the fact that they have dedicated and cohesive staff. The interviewee also reflected that it might be good to have some type of rotation with doctors, so doctors are both in wards and in the HaH-program. Both because of the heavy burden of working in HaH but also to increase knowledge about the program in the units. David Nicolás Ocejo explained that their staff have mainly general knowledge, such as general practitioners or internal medicine, since they know a little of everything. But they also have very detailed protocols for specific cases, with a contact person within that speciality when questions arise. Furthermore, David Nicolás Ocejo lifted the need to always keep learning new competencies in the HaH-program and to have everything protocolised, which makes it easier to grow the program and onboard new people.

Another key aspect of running a HaH-program is the coordination between different services. All of the interviewees lifted the significance of having a working coordination between different services, such as ambulances, primary care, municipalities, other com-

munity services, and the HaH-program. Both because of the possibility of receiving referrals into the HaH-program, but David Nicolás Ocejo also highlighted how it is important when discharging patients. At Hospital Clínic de Barcelona when discharging patients that meet certain criteria, the primary care gets an update that the patient is being discharged and made aware that they are taking over the responsibility. But this collaboration also enables ambulance personnel to assess patients in their homes and directly refer suitable patients to the HaH-program, thereby avoiding unnecessary hospital admission. One interviewee highlighted that an important aspect of collaboration between different services is educating the services on which patients and cases that are suitable for admittance to the HaH-program.

David Nicolás Ocejo emphasised the importance of starting with a broad clinical scope, incorporating multiple conditions rather than limiting the program to a single diagnosis, since the interviewee believed that in order for HaH-programs to be effective, the bed capacity needs to be around 50 to 80 beds. This is consistent with the view expressed by Cécile Bordenave and Emilie Lebee Thomas, who emphasised that an estimated volume of around 50 patients per day is necessary for operational efficiency. With the same aim of achieving efficiency in the HaH-program at Hospital Clínic de Barcelona, and since the program requires many central services such as administrative, logistics, pharmacy and nurses, they decided that it makes more sense to run the HaH-program as one unit compared to having a different HaH-program connected to each speciality.

4.3 Technological Aspects and Care Redesign

Another aspect mentioned by the interviewees was the importance of technology, specifically the need for systems and platforms that support this type of care. Carsten Schmid discussed the importance of ensuring interoperability between different healthcare providers' systems, while the system is also able to handle functions such as remote monitoring. David Nicolás Ocejo further emphasised the importance for everyone having access to relevant information at all times, but also the role of a quality management system in settings with high staff turnover and new staff who need to learn procedures and protocols. Another aspect of HaH is the need for logistic planning, which Cécile Bordenave and Emilie Lebee Thomas believed that different software can be useful in order to coordinate medical equipment and personnel.

Nirit Pilosof described an ongoing transformation in healthcare, where care is increasingly being moved into patients' homes. Pilosof compared this transformation with the early stages of digitalisation, as in the beginning of digitalisation the change was just going from paper to a digital platform, but later changed how the work and documentation were done. In relation to HaH, Pilosof emphasised that instead of just moving the service from the hospital to the patient's home, there is incredible potential and need to rethink and redesign the service when doing it at home, which makes the question on how to organise HaH especially relevant. With examples such as the routines and timetables adapted to the hospital, the care might not work perfectly when moving patients home. One key for working with this according to Pilosof is to think about the personalisation and how to tailor each program to the specific needs for each patient group adapted to the uncertainty of providing care in the patient's home. Carsten Schmid suggested that the emergence of HaH-programs, and the shift from working in a hospital to working in patients' homes, may encourage healthcare professionals who have left the healthcare

sector to return to the workforce.

5

Results from Case Interviews

Based on the findings from the case interviews, combined with provided written documents and information through websites, the following section aims to provide an overview of each hospital's HaH-program in each specific country and especially focusing on how these programs are organised.

5.1 NUHS@Home in Singapore

The findings presented in this section are based on personal communication with Johnny Chan (16 April 2026), operations and administration lead at NUHS@Home, complemented with information from the organisation's website and additional information in written reports.

5.1.1 Background

Ko et al. (2026) states that Singapore's aging population, bed capacity issues (2.1 beds per 1000 inhabitants), and rising healthcare costs emphasises the need to explore alternative care models, and HaH-programs were one alternative. After running a pilot project, the nationwide Hospital at Home program called Mobile Inpatient Care @ Home (MIC@home) was officially introduced by the Ministry of Health (MOH) in 2022 as a sandbox, particularly for people recovering after a hospital stay, but has since then expanded to patients that have not been admitted to a hospital. In 2024, MIC@home was formally included in mainstream care by MOH. As a part of MIC@home, the National University Health System (NUHS), the cluster responsible for the western part of Singapore, is running their own version called NUHS@home. The program covers all the three acute hospitals that are located in the region.

Ko et al. (2022) argues that it is a favorable landscape for the development of HaH services in Singapore. The environment is very unique given their high population density and compact urban structure. The western part of Singapore has around 4577 inhabitants per km^2 , with the furthest housing district being only 15 kilometers from a hospital. Johnny Chan mentioned that since NUHS@home was piloted in 2020, it has evolved and now has a capacity of around 120 patients per day. In the beginning, the capacity of the program was three beds, and the team consisted of one attending physician, one nurse, one pharmacist, and one program coordinator (Ko et al., 2022). Nursing and physician visits after office hours were conducted by a third party vendor. As the program developed, additional services were accessible, such as visits by physiotherapy, occupational therapy and social work (Ko et al. 2026).

According to Johnny Chan, the initial purpose with the program was to reduce costs and increase the bed capacity. However, over time the focus has shifted towards patients' benefits, as patients tend to recover better at home mainly by avoiding hospital-acquired infections.

5.1.2 Care Model

Johnny Chan stated that there is no difference between the type of services included in the program and those expected in typical inpatient hospital care. Remote vital sign monitoring, intravenous (IV) infusions or injections, laboratory investigations such as blood or urine tests are some examples of services that are included. These services cover a wide range of medical conditions, from common ailments like cellulitis, urinary tract infections and pneumonia, to more particular needs like post-operative care for specific surgeries. The whole point is that the patients can be assured that the services and treatment they receive at home are similar to the care they otherwise should receive in the hospital (NUHS, 2025).

Johnny Chan mentioned that in the program, acute medical patients, mostly from internal medicine such as cellulitis, urinary tract infections (UTI), and dengue fever are treated. Other common patient groups are pediatric patients and neonates. Palliative care is not in their core business, but they can support the palliative care team if the patient requires hospital admission. They have recently also been starting to look into additional new pathways, for example for surgical patients including both pre- and post-surgical care, but the care is still at an inpatient level.

The program has both early supported discharge and admission avoidance, and there are mainly three pathways to be referred to the program. First, patients can be referred to the program from doctors at the hospital's emergency department and in that way avoid a hospital admission. The second pathway is through the hospital ward, where patients that earlier have been treated in the hospital now can be treated at home. This is normally called early supported discharge, even if Johnny Chan does not prefer to use that term, arguing that it is not a discharge in that traditional sense, because the patient still receives hospital-level care at home. Lastly, patients can also be referred via the primary care or community services hence also avoid the emergency department at the hospital. However, being referred from the primary care requires an additional step where there is also another separate service at the hospital, called Virtual Care Center, who have to decide whether the patient should be handed over to either the hospital at home program, the emergency department or just keeping them in the primary care.

According to Ko et al. (2023) a majority of people older than 65 years old lived with their children or extended relatives in Southeast and South Asia, at the same time nearly half of the caregivers employed live-in domestic helpers to assist with caregiving duties. One of the key findings of the study was that social support plays a vital role in HaH-care and today to be eligible for NUHS@home program, the patient needs at least a caregiver or family member present to ensure safety (NUHS, 2025). Which is confirmed by Johnny Chan who described that they do not have very strict inclusion and exclusion criteria, but one aspect mentioned was that they do not have the ability to manage the patient if they do not have some self-care ability.

The multidisciplinary team within the program consists of doctors, nurses, pharmacists,

and therapists who monitor the patient's condition remotely via smart devices and home visits when it is required. The service is further supported by daily virtual video consultations and a 24/7 dedicated telephone number. There is also a WhatsApp group for the patient, where they can communicate with the team that is taking care of them. In specific cases when needed, even physio and occupational therapy, rehabilitation and nutrition can be included in the team (NUHS, 2025).

In the NUHS@Home program, there are two types of remote monitoring. One is designed for patients who are more knowledgeable about technology and therefore are required to be more involved in submitting their vital signs. The other is intended for patients with lower technological proficiency, who are instead provided with bluetooth integrated devices. According to Johnny Chan, it would be ideal if this monitoring was integrated with their electrical medical record (EMR) system, but this is not currently possible due to governance issues. Another technology being used is smart glasses, which has reduced the number of people needing to visit the patient. Previously, both a doctor and a nurse would visit the patient, but with the smart glasses, only the nurse is needed in the patient's home. The nurse is responsible for the procedures and wearing the smartglasses, while the doctor, from headquarters, is responsible for the clinical assessment and decision, which is made possible through the videofeed from the glasses.

5.1.3 Organisation

The NUHS@home program is organised as a separate independent unit within one of the three acute hospitals located in the western region of Singapore. The reason behind that is mainly due to geographical aspects, where Johnny Chan meant that since the hospitals are located so close to each other, less than five kilometers apart, "... it doesn't make sense for each of them to start a new service because there will just be too much overlaps". Chan further emphasised that your desire will drive how you want to organise. Since the goal already from the beginning was 400 beds, Johnny Chan means that it did not make sense that each hospital runs their own program, as they would eventually outgrow that structure. Instead, he argued that establishing it as an independent unit early allows the program to benefit from economies of scale and avoids the need for later restructuring.

While Johnny Chan emphasised that establishing the program early as an independent unit supporting all three hospitals in the region helped them avoid a major reorganisation later on, changes in the ways of working are still necessary. Chan meant that what worked for 10-20 beds capacity does not necessarily work for 120 beds. One illustrative example of this is the manually use of WhatsApp groups to communicate with the patients, with one group per patient. As the program has grown to around 120 patients, this has resulted in a very large number of separate chat groups making the communication increasingly insufficient highlighting the need for an integrated communication platform. Other needs that arose as the program grew are for example the need for a CRM system helping to keep track of all the logistics and coordination tasks that a patient needs and a command center to coordinate and manage the patient capacity, which are solutions they are currently exploring.

One strategic organisational decision they have made is to not include the community based services, such as community nurses also providing home care, within NUHS@home. According to Johnny Chan, this is mainly because of differences in the level of care. NUHS@home manages more acute patients, while community nurses manage more stable

lower acuity patients. In addition, the two systems are currently under different management teams with different clinical governance. But in the beginning of the program community nurses were used, but what Johnny Chan realised was that the community nurses have their own routines and procedures that they fall back to, which is counterproductive when trying to change the way things are done. However, to ensure effective integrated care it still requires close collaboration with these community partners.

As previously mentioned, the program also collaborates with external vendors that mainly cover the simple tasks that do not require a highly trained nurse to do. However, that collaboration also comes with some problems. Instead of relying solely on one, they have multiple vendors which creates a coordination complexity, which according to Johnny Chan is challenging to manage. Besides that, Chan also mentioned problems with quality assurance as the quality of the vendors in terms of competence can differ, with examples such as missing instructions, giving wrong medicine or the vendor may assume that a revisit is due to the same issue as before whereas it may actually be a new condition. In addition, the vendors run their own documentation system which also causes challenges. However, despite these challenges, Johnny Chan highlighted that the vendors still are a critical part of their services as they enable the organisation to flexibly adjust resources in response to fluctuating demands without the need to internally hire temporary staff. However, the interviewee also argued that, in order to maintain this flexibility, a baseline relationship with vendors is necessary, as they cannot simply be engaged during busy periods and then ignored for the rest of the year.

One aspect Johnny Chan emphasised is that providing care in patients' homes requires different competences than care delivered in hospital settings. Because "in the hospital everything is very well optimised" as in a hospital ward, nurses can immediately turn to a doctor or rely on hospital support if something happens. While in the community the practitioners are often on their own, so they need to be independent, but also adaptable since every patient's home is different. This contrasts with hospital wards, which are typically more standardised. According to Johnny Chan, there is also a need to train people in how to discern symptoms and signs of distress during teleconsultations, which is not an intuitive part of the clinical training of staff today. Another difference between providing care in the hospital and in the NUHS@Home program is the manpower deployment. Hospitals often have a very strict schedule which is not flexible based on how many patients the hospital currently has and around the clock. However, for NUHS@Home it is possible for more flexibility by using vendors outside of office hours, and during peak periods, in order to adapt after the number of patients admitted to the program. Furthermore, policies are designed for brick-and-mortar hospitals, which in some cases do not make sense when providing care in patients' homes. One example is the question of responsibility, if a patient falls in the hospital, the hospital is responsible. However, is it reasonable that NUHS@Home is responsible if a patient falls in their home? One of Johnny Chan's conclusions was that the structure of brick-and-mortar hospitals does not necessarily support the processes required for providing care in a patient's home and therefore there is a need for creating their own processes.

Johnny Chan emphasised the importance of having a standardised process in order to continue to grow. Chan highlighted that some services, such as logistics and medication delivery, can be batched into routines to minimise the variation in the processes. However, retaining some flexibility is still necessary as healthcare services can not be fully standardised. Johnny Chan described a 80/20 rule of thumb, where 80 percent of

the patient's needs can be managed by a generalist and 20 percent requires inputs from specialists. However, while the clinical tasks mainly should be managed through generalists with support from specialists, Johnny Chan argued that the administrative tasks, such as financial counseling, logistics and coordination, should be separately managed by specialists since such tasks require more expertise.

At the end of the interview, Johnny Chan shared some of his advice to other organisations on how to organise their programs, especially as they grow. Chan really emphasised that each program has its own history and context, meaning that what works in one organisation do not necessarily need to work in another. In addition, the interviewee also argues that the organisation needs to specify clear goals on where they want to be, and decide in advance how big they aim to be. Furthermore, Chan also highlighted the importance of continuously evaluating your organisational approach and being willing to adapt or even redesign your organisation if necessary.

5.2 HSU Home Hospital in Iceland

The findings presented in this section are based on personal communication with Guðný Stella Guðnadóttir (1 April 2026; 20 April 2026), director of Selfoss HaH-program, supported by additional written material provided by the interviewee.

5.2.1 Background

The Healthcare Institution of South Iceland (HSU), as the name suggests, operates in the southern region of Iceland. It includes ten primary care centers located around the region and two different hospitals located in Selfoss and the Vestmannaeyjar islands. Guðný Stella Guðnadóttir described the region as a rural area covering 30 983 km^2 with a total population of 35 278, meaning an average population density of approximately 1 inhabitant per km^2. However, the majority of the population is concentrated in the region around Selfoss, where the population density is approximately 29 inhabitants per km^2.

The Hospital at Home program in the southern region of Iceland was piloted in 2023, but officially launched in January 2024. Initially, it served only patients in the area around Selfoss, but on the day one of the interviews were conducted (April 20, 2026), it expanded to also serve patients in the Vestmannaeyjar islands. During 2025, the program had a total capacity of treating 211 patients per year and approximately 260 admissions.

Guðný Stella Guðnadóttir highlighted that one crucial aspect of the program's growth is the financial support from the Ministry of Health. Stella Guðnadóttir explained that this support provided them with the financial resources needed to continue growing and developing the model. The goal with the program is to decrease the need for hospital beds, ensure a high quality and patient safety, more effective use of resources and improve the experience for patients. Another viewpoint brought up was that some patients do not see inpatient care at a hospital as an option for them. For these patients, the HaH-program can offer a possibility to recieve care, maybe not equivalent to hospital care, but better than nothing.

5.2.2 Care Model

Guðný Stella Guðnadóttir described that they use a mixed model of care, which is generally broader than the international definition of Hospital at Home. They provide both acute and palliative care, including services such as intravenous treatments and laboratory investigations such as urine and blood tests. In 2024, the three most common medical conditions were dyspnea, general fatigue and heart failure.

Furthermore, Guðný Stella Guðnadóttir explained that the program has some well predetermined patient criteria whether the patients are eligible for the program or not. It is required that the patient lives in the area around Selfoss and also meets at least one of the following criteria; have home care nursing, receive palliative care, be 75 years old or older living with family or disabled people living in a supported living facility or at home with support. As these criteria suggest, the majority of the patients included in the program are frail, elderly, and multimorbidity patients. Patients can be referred to the program in multiple different ways. Staff from the emergency department, hospital wards, home care nursing or primary care can contact the HaH team to admit patients.

The team within the program consists of seven people, mainly nurses with some specialist support from doctors. Currently, the same team performs all tasks. Guðný Stella Guðnadóttir described that the team operates from 8 AM to 12 PM, with the first hour allocated for calls and coordination, and home visits taking place from 9 AM to 12 PM. For the rest of the day, home care nursing staff are responsible for the patients. The nurses within the HaH team therefore work from 8 AM to 12 PM in HaH, and spend the rest of their working hours in home care nursing.

5.2.3 Organisation

Today, the program is organised under primary care instead of the hospital organisation. This is due to the hospital's mixed model of care, where both primary care, traditional home nursing and HaH services all operate under the same roof in Selfoss. For this reason, Guðný Stella Guðnadóttir meant that they decided to coordinate all these different services together and organisationally placed it under primary care. However, the interviewee meant that a disadvantage of this structure is that the patients sometimes cannot clearly distinguish between home nursing care and HaH care, which can blur the differences between these services.

As home nursing teams support HaH outside its operating hours, Guðný Stella Guðnadóttir emphasised the close collaboration they have with these teams, with some staff even working in both services. Home nursing teams have therefore over time expanded their competencies and are now able to manage more complex tasks than they usually do. Guðný Stella Guðnadóttir further argued that this way of organising their HaH services is necessary in a rural setting. It was also emphasised the importance of utilising local resources and adapting the organisation to the specific context in which it operates in.

However, Guðný Stella Guðnadóttir mentioned that they have not always been organised in the way they are now. When the program was piloted in 2023, it was organised under the emergency department. However, this structure was not successful, which Guðný Stella Guðnadóttir believed was mainly due to the fact that the nurses in the emergency department are not used to working in the patient's home. This may also be explained by the leave of absence taken by Guðný Stella Guðnadóttir, who played a central role in

the implementation and development of the program. Additionally, there were many staff involved from different parts of the hospital organisation, which resulted in a disorganised situation where it was unclear who was responsible for the program.

The vision of the next five years is to implement HaH services at all primary care centers and serve the entire southern region of Iceland. To achieve this, Guðný Stella Guðnadóttir emphasised that the most important thing from an organisational perspective will be to coordinate the care through a central command center at the hospital in Selfoss. This center would support local primary care centers by providing clinical expertise and backup for more complex tasks, as these local care centers do not have hospital-level expertise. As the distance to the hospital increases, this will also place greater demands on remote monitoring and video consultations, as it becomes more difficult and inefficient for the teams at Selfoss to meet the patients in person. Additionally, Guðný Stella Guðnadóttir meant that expanding their HaH-program implies a big organisational change and the staff in primary care have to change their mindset and working processes. Each primary care center may develop its own model suited for their specific setting as it can vary across different centers.

5.3 AP-HP HAD in France

The findings presented in this section are primarily based on personal communication with Niccolo Curatolo (22 April 2026), director of operations, pathways, and development at Hospitalisation à Domicile AP-HP, complemented with information from the organisation's website.

5.3.1 Background

AP-HP (Paris Public Hospitals) is the public university hospital system of Paris and the largest in Europe, comprising 38 hospitals and treating over 8 million patients each year. AP-HP manages the largest public HaH service in France, which in France is called Hospitalisation à domicile (HAD). The program was introduced in 1957 as the first organisation in France providing hospital-level care in patients' homes. Since then, the program has expanded, treating a broader scope of conditions and serving more patients. Today, they have a capacity to serve around 900 patients each day (AP-HP, n.d.). Niccolo Curatolo described that the program covers a total area of approximately 700 km^2, with an average population density of around 9200 inhabitants per km^2.

Niccolo Curatolo said that the main objective with the program is to deliver hospital-level care in a more patient-centered environment to improve quality of life while also maintaining safety and clinical outcomes. However, over time, the role of HaH has expanded from an initial focus on patient discharge from hospital to also serving as a tool to optimise care pathways, reduce hospital length of stay, and prevent unnecessary admissions.

5.3.2 Care Model

Niccolo Curatolo further explained that their program provides a wide range of care, including palliative care, complex wound care, pain management, rehabilitation, intravenous treatment, respiratory assistance, artificial nutrition and oncology, including chemotherapy administration. They are also currently developing new pathways, particularly post-

surgical care and early intervention pathways to avoid emergency department visits. The programs serve a broad range of patients across all age groups.

Niccolo Curatolo described that they have close collaboration with many organisations in the region that can refer patients to their program. Patients can be referred through multiple pathways, including AP-HP hospitals, other hospital organisations in Paris, or directly from community services such as general practitioners, nursing homes, or primary care providers. According to Niccolo Curatolo, referrals can be made by email, phone or via an online form.

As described by Niccolo Curatolo, eligibility for the program requires that patients have a need of hospital-level care that can be safely delivered at home, are clinical stable, and have a suitable home environment, including agreement from both the patient and caregiver. Exclusion criteria include clinical instability requiring continuous hospital monitoring, unsafe home conditions, or lack of patient consent. The program delivers 24/7 hospital-level care through multidisciplinary teams including nurses, physicians, and other specialists if needed, supported with a night team providing coverage during the night and on-call medical staff. The teams within the program are dedicated exclusively to HaH services (AP-HP, n.d.).

Niccolo Curatolo further described that they currently make limited use of technology, such as video consultations and telemonitoring, which are, except for some specific situations, still poorly developed. Nurses and doctors are not really used to working with such tools and therefore make limited use of them. Curatolo also explained that many other HaH-programs across the world were developed during the COVID-19 pandemic, when remote care became necessary to limit the physical contact with patients, whereas at AP-HP the program was established earlier and is therefore more focused on physical patient contact, which has resulted in a more limited use of technology. However, they are currently working with external partners to increase the use of technology, which Niccolo Curatolo believes will be an important aspect for the future development of the program.

5.3.3 Organisation

The program is organised into approximately 24 smaller local units (15 for adults, 6 pediatrics and 3 for obstetrics) based on geographic areas, each covering different parts of Paris. This means that hospitals refer patients to the HaH unit responsible for the geographical area in which the patient lives. Therefore, the referring hospital does not necessarily have to be located in the same area as the HaH unit providing the patient's care. Most of the units are organised in an AP-HP hospital, although some are not. Niccolo Curatolo explained that all units can take care of all types of patients, but only in their department: pediatrics, adults or obstetrics. Some administrative activities are centralised in one unit, such as the requests for admittance and the dispatching of patients to the different units. This organisational structure is based on historical reasons, as Curatolo explained that initially it was fewer units, although the model has remained the same over the time.

The program is supported by community nurses, with approximately 50 percent of the activities of the adult department in AP-HP HAD is conducted by these community nurses. The program is organised through contractual agreements with community nurses, who are paid by the program but not formally employed by it. When registering a new

community nurse, an assessment of competence is conducted. Based on this evaluation, the nurse is assigned patients of varying complexity, depending on the nurse's level of expertise.

According to Niccolo Curatolo, the advantages of this organisational model are that it minimises the travel time to the patients, and that smaller structures are easier to manage than larger ones. The interviewee further emphasised that the local structure provides quick access to the patients, which enables them to take care of a broader range of patients, including more complex ones. However, one disadvantage is that new clinical pathways must be implemented and adopted at each unit individually, which can be challenging to coordinate and requires clear protocols and standardised processes. In addition, Niccolo Curatolo mentioned that if one unit is understaffed, it may negatively affect the capacity within that specific region. They have therefore started to work more across the geographical boundaries to support each other, with the short-term goal that all units should be able to manage a larger geographical zone.

While the program is primarily organised through geographically distributed local units, Niccolo Curatolo explained that the organisation has gradually started to move towards a more mixed structure. Today, some specialised teams have been developed to support the general teams in more complex and specific situations that require specialised expertise. These specialised teams provide support across all local units. According to Niccolo Curatolo, this combination of both local general teams with support from specialised teams is the most effective organisational structure to balance local accessibility with specialised expertise when it is needed.

Niccolo Curatolo mentioned the reimbursement system as one hinder that needs to be addressed. The interviewee explained that the current funding model is based on activity, meaning that the hospitals are financially incentivised to keep the beds occupied, since they are paid per occupied bed. As a result, there are limited incentives for the hospital to refer patients to a HaH-program, even though it is less costly, since it may lead to underutilised hospital beds. This can in turn lead to the management removing resources and nurses from the ward if they can not keep their beds occupied. However, despite this, Niccolo Curatolo is positive about the future development of the program. The long-term goal is to expand the services and establish new units in regions where they currently do not yet operate. Curatolo also stated that the ambition is that HaH becomes a real alternative to hospital care, rather than just a way of getting patients out of the hospitals."We're really trying to develop standardised pathways where Hospital at Home is included as a standard care option". In addition, Curatolo also emphasised the importance of communicating their existence with stakeholders and increasing the knowledge about HaH among staff working in the hospitals. As their organisation is separate from the hospitals, Niccolo Curatolo meant that hospital staff are not always aware of their services, which in turn may limit understanding of the model and reduce collaboration with hospital teams. One way Niccolo Curatolo suggested that this could be solved in the future was by having rotation of the staff, where people work both with the program and in a hospital.

5.4 Summary of Case Interview Results

Table 5.1 provides a comparative overview of the three HaH-programs based on the case interviews, highlighting key similarities and differences in their organisational structures,

care models, and operational contexts.

Table 5.1: Comparison of the three HaH-programs

Aspect	**NUHS@Home, Singapore**	**HSU Home Hospital, Iceland**	**AP-HP HAD, France**
Program maturity	Launched 2020	Piloted 2023, launched 2024	Introduced 1957
Population density	High-density urban area with approximately 4577 inhabitants per km²	Small urban area with 29 inhabitants per km² (Selfoss) and low-density rural area with approximately 1 inhabitant per km² (HSU)	High-density urban area with approximately 9200 inhabitants per km²
Program goal	Reduce costs, increase bed capacity, later also patients' benefits	Decrease need for hospital beds, improve quality, patient safety, more effective use of resources	Provide hospital-level care in a patient-centered environment, improve quality of life, optimise care pathways, reduce hospital length of stay, and prevent unnecessary admissions
Patient volume	120 patients/day capacity	211 patients/year capacity, approx. 260 admissions	900 patients/day capacity
Patient groups	Acute medical patients, pediatrics, and neonates	Frail, elderly, and multimorbid patients	Broad range covering all age groups
Type of services	Remote vital sign monitoring, IV infusions or injections, laboratory investigations	Acute and palliative care, IV treatments, laboratory investigations	Palliative care, wound care, pain management, rehabilitation, IV treatment, respiratory support, oncology
Referral pathways	Emergency department, hospital wards, primary care, or community services	Emergency department, hospital wards, home care nursing, or primary care	AP-HP hospitals, other hospital organisations in Paris, or community services
Financing model	Public integrated system, HaH included in mainstream care	Public healthcare system with central government funding support for HaH development	Public hospital system, activity-based reimbursement leading to weak HaH incentives

Continued on next page

Aspect	**NUHS@Home, Singapore**	**HSU Home Hospital, Iceland**	**AP-HP HAD, France**
Centralisation vs decentralisation	Centralised independent unit within NUHS covering three hospitals	Highly decentralised, integrated within local primary care services	Mixed model with centralised administration and decentralised geographical units
Team structure	Dedicated HaH teams	Shared workforce between HaH and home nursing services	Dedicated HaH teams
Level of specialisation in the teams	General teams	General team	Mostly general teams with some specialised teams
Use of technology	High use: remote monitoring, video consultation, smart glasses	Moderate use: monitoring and video consultations	Limited but increasing use: telemonitoring and video consultations
External collaboration	External vendors		Contracted community nurses (50%)
Future	Broaden the clinical scope and increase bed capacity in the program	Help primary care centers to develop their own models, and connect them into a network with Selfoss as a command center	Expand and establish new units and look into more specialised teams

6

Discussion

This section focuses on summarising, analysing, and connecting the theoretical framework with insights from the informant interviews and the case interviews. This is to give a deeper understanding of how the chosen HaH-programs are organised and important aspect of scaling HaH-programs.

6.1 Definition of HaH

One central empirical finding is that there does not seem to be a single optimal way to organise HaH-programs. Three different cases have been studied, and although they differ in both structure and clinical content, all programs are established and functioning operationally in their respective contexts. This aligns with Galbraith (1971) and Youker (1977), who emphasise that there is no such thing as a perfect organisational design. Lawrence and Lorsch (1967) further argue that organisations must adapt their structure to its environment.

Despite the international definition of Hospital at Home (WHAHC Scientific Committee Hospital at Home, 2024), the programs differ in terms of how they apply and define HaH in practice. What varies is not only how HaH is organised, but also what HaH is actually considered to be. For example, both HSU and AP-HP include palliative care in their programs, which according to the definition is not included in HaH, as palliative care is not typically considered as acute inpatient hospital care. The three programs are located in different healthcare systems and, as shown in table 5.1, the programs differ in several aspects such as patient volume, type of services, financing model, and use of technology. However, some similarities are also seen, for example in the level of specialisation in the teams, all three programs have more general teams.

The differences between the programs make it difficult to compare them with each other, as the program operates under different organisational conditions, healthcare structures, patient groups, and goals of the programs. As a result, organisational solutions that are effective in one context may not necessarily be transferable to another. This means that models cannot simply be transferred between organisations without an understanding of and adaptation to the local context. This is further supported by Denecke et al. (2024), who highlight the challenge of comparing different HaH-models and developed a framework for describing its complexity covering different dimensions.

6.2 Geographical Context and Technology Usage

HSU in Iceland operates in a small urban area with plans for future expansions into more rural areas. As shown in the result, the program is organised under primary care with support from the hospital. This organisational structure appears to reflect the geographical realities of Iceland, where long distances exist both between patients and between patients and the hospital.

These distances make a fully centralised organisational model inefficient for delivering care in patients' homes. Instead, with the primary care being dispersed over the region, this was seen as a necessary way of moving the resources responsible for the HaH-care closer to the patient and therefore reduce travel time, making the program more resource efficient. As a consequence of organising the program under primary care, Guðný Stella Guðnadóttir also lifted that each primary care center must develop their own model and adapt to their specific conditions, since the conditions can differ between primary care centers. A potential consequence of primary care centers having their own HaH-model, is that the overarching HaH-program becomes less standardised. This requires more from services such as the hospital and ambulances, that need to understand the differences between the models and how to work with them.

Another necessity identified in Iceland was the use of digital technology. Due to the geographical distances, HSU is investigating the possibility of establishing a command center at the hospital in Selfoss, from which remote monitoring could be controlled. Through the command center, the hospital can provide clinical expertise and support to the primary care centers. The use of remote monitoring can both expand the pool of eligible patients for the program and increase the catchment area which, according to Purarjomandlangrudi et al. (2025), can contribute to more stable patient volumes. Stable patient volumes enhance predictability, which in turn supports more efficient planning and resource allocation. According to David Nicolás Ocejo, a certain patient volume is necessary for hospital staff to maintain awareness of the program and make sure they recognise which patients are appropriate for the program. Emilie Lebee Thomas and David Nicolás Ocejo also highlighted that HaH-programs generally require a daily patient volume of at least around 50 patients in order to function effectively and maintain organisational sustainability. This number is based on experiences of programs that have a large enough patient population to operate full time and have dedicated teams working exclusively in the HaH-program. However, for programs that do not have full time dedicated staff, the optimal number might be lower, which suggests that for HSU, with their program organised under primary care and personnel working only before noon in the HaH-program, the optimal number of patients might not be 50.

In contrast, AP-HP's HaH-program operates with a central administration and local units linked to geographical areas, while remaining under the hospital's governance. However, in this case, technology plays a less central role, and care still relies largely on in person visits. This may be explained by AP-HP's long history of providing home-based care for over 50 years, which means that the program began before the development of remote monitoring technologies. As a result, there may be a degree of inertia in the system, where established practices continue over time. In addition, the urban environment with a dense population, does not create the same pressure for technology change as a rural or geographically dispersed setting. Similarly, NUHS operates in an urban environment comparable to AP-HP but is a relatively new program, established around 6 years ago. In contrast to AP-HP, a significant proportion of care is delivered through remote monitoring and telemedicine.

This suggests that the role of technology in HaH-programs can vary, in some cases it is a necessity, while in others it is a strategic choice. However, it is likely that it is difficult to establish a HaH-program today without relying on digital tools such as telemedicine and remote monitoring while still maintaining efficiency.

6.3 Collaboration Between Services

What was seen as important both in the literature (Newton et el., 2024) and in the interviews was the collaboration between the program, and not only the other units in the hospital, but also other services in the community. This includes coordination between services such as primary

care, general practices, hospital services, nursing homes, and ambulances. This coordination can be seen as particularly important due to the presence of often multiple and overlapping pathways into a HaH-program. Firstly, it is important that people working in adjacent services are aware of the HaH-program, otherwise they cannot refer patients to the program. For example, David Nicolás Ocejo explained how ambulance personnel are able to assess patients in their home and refer them directly to the HaH-program, thereby avoiding unnecessary hospital visits. Similarly, when some patients are discharged from the program, primary care services are notified to ensure continuity of care. Secondly, multiple pathways from different services means that no service has full control over the patient flow, which makes structured coordination between services necessary to ensure continuity of care and to ensure that patient intake does not exceed availability. The multiple pathways may not differ entirely from brick-and-mortar hospital care, however these pathways in HaH-programs can be more distributed over organisational and physical locations, which means that HaH-care shifts responsibility from a single location, the hospital, to more of a network involving multiple actors. This could suggest that HaH-programs require a higher degree of system integration compared to conventional hospital care and need some type of centralised coordination.

One way of increasing the integration between different services proposed by the interviewees, Newton et al. (2024) and Purarjomandlangrudi et al. (2025) was to use a joint or integrated electronic system that can, among other things, handle remote monitoring and sharing of electronic medical records, and importantly all the services involved should have access. The sharing of patient data and use of shared systems can be easier or harder depending on how the healthcare system is organised in the respective country. In countries where different services within the healthcare sector is organised under the same governance, sharing data between these may be easier. However, in countries with a more organisationally fragmented healthcare can make the sharing of data harder.

6.4 Balancing Organisational Differentiation and Integration

The empirical results suggest that HaH requires a certain degree of organisational separation because of the differences compared to traditional hospital care. This indicates that HaH requires a certain separation from the hospital in order to develop its own operational logic, which can be understood as a form of organisational differentiation.

However, as identified by Lawrence and Lorsch (1967), a differentiated organisation also creates challenges. The authors argue that members tend to develop different goals and priorities depending on which subsystem they operate in. This is supported by the empirical findings where several examples show how hospitals and HaH can have different goals and incentives. One example of this, mentioned by David Nicolás Ocejo, is the “free beds syndrome", where hospitals may have incentives to keep the beds occupied, as this is associated with maintaining resources. This can result in patients not being transferred to HaH-programs, even when they would have preferred to receive care at home. However, in hospitals where overcrowding is a main issue, the “free beds syndrome” may be less common, as the need to free up capacity becomes more central. Furthermore, several interviewees highlighted that the current reimbursement system is not adapted to HaH-care. Cécile Bordenave and Emelie Lebee Thomas argued that, in some cases, inpatient care is financially better reimbursed than HaH, which further amplifies differences in incentives. They argued that a form of competition over patients may arise, which reinforces differences between hospital care and HaH. If the program does not receive patients, there is a lack of incentives to further develop and increase the capacity of the HaH-program. This highlights the need for a funding model that is adapted for HaH-care and does not create

a competition between hospital care and home-based care.

Lawrence and Lorsch (1967) state that the more differentiated an organisation is, the greater is the need for integration. This is evident in the relationship between hospitals and HaH-programs, where differentiation increases the need for integration mechanisms that support HaH-care to become a natural part of the healthcare system, in order to address the challenges of growing healthcare demands. One such mechanism for achieving integration, mentioned during the interviews, could be to have staff who rotate and work both in the hospitals and within HaH-programs. This is supported by Newton et al. (2024), who argue that collaboration can increase by having rotation of staff. However, in contrast, Guðný Stella Guðnadóttir mentioned that at first, staff from the emergency department worked in patients' homes. This approach was not successful, partly because the staff were not used to working in patients' homes instead of the hospital environment. This was also mentioned by Johnny Chan, who described challenges in integrating HaH-services with community nurses as they already had established routines and working methods that were not adapted to HaH. This indicates that the integration challenge is not only about organisational aspects, but also about differences in ways of working and experiences. Purarjomandlangrudi et al. (2025) highlights the importance of education and staff experience, where clinicians experienced in working with home-based care are better at selecting appropriate patients for HaH care than staff working at hospitals. This can further strengthen the argument for a certain degree of organisational separation, as dedicated teams can enable the development of routines and ways of working that are adapted to HaH. However, Niccolo Curatolo noted that a consequence of organising the program separately from hospitals is that hospital staff are not always aware of the program, which can affect both collaboration and the knowledge of the program. In addition, David Nicolás Ocejo argued that it can be demanding to exclusively work within HaH. Therefore, they both argued that staff rotation can be a possible solution to these problems.

In contrast to the majority of the empirical cases, Nirit Pilosof described a different way of organising HaH at Sheba Medical Center. Most of the cases have a separate HaH-program with its own structure and teams. At Sheba MC, instead, each clinical unit is responsible for their own patients both in the ward and in the home, while a central support function, Sheba Beyond, manages the technology, logistics and pays for the manpower. Sheba's organisational model, which operates as an extension of the hospital's clinical units, therefore involves a higher degree of integration with the hospital's structures and ways of working. This structure can potentially create a clearer clinical ownership, where the teams are responsible for the whole patient flow, not just the part of the care provided in the hospital or in the patient's home. A greater integration with the hospital may also lead to that HaH becomes a natural part of the healthcare system and could potentially also increase the awareness and understanding of HaH. However, when HaH is not organised as a separate unit, differences between HaH and hospital care may become less clear. It can become difficult to develop own routines and ways of working that are adopted to HaH. It also means that there is risk that working methods and routines from the hospitals are transferred to the patient's home, meaning that the care may not be adapted for a home-based setting.

6.5 Generalist Teams with Specialist Support

HaH requires a broad enough clinical scope to be able to get patient volume. If the program is limited to a smaller number of patient groups, volumes may become too low to motivate capacity and the overall effectiveness may decrease. As earlier mentioned, David Nicolás Ocejo highlighted that HaH-programs require a capacity of at least 50 beds in order to be effective. However, as the clinical scope broadens, it becomes inefficient to build separate specialist teams

for each patient group within each local unit, as the volume within each speciality risks becoming too low. One recurring theme in the empirical results was therefore to have generalist teams supported by some specialised teams or close contact with specialists at the hospitals. Johnny Chan described this with the 80/20 rule of thumb, where 80 percent of the patient's needs can be managed by a generalist and 20 percent requires inputs from specialists. In Barcelona, the staff have mainly general competencies, such as general practitioners and internal medicine, with clear protocols for specific cases and support from specialists when needed. David Nicolás Ocejo highlighted that such protocols are essential to enable general teams to manage a broad clinical scope. The program at AP-HP is organised in a similar way where local general teams get support from central specialised teams in more complex cases where more advanced expertise is required.

This indicates that some functions can more effectively be organised centrally rather than within each local unit. In addition to specialist support, several of those interviewed mentioned the advantages of having centralised administrative and logistical activities. Both Nirit Pilosof and Niccolo Curatolo explained that they have administrative tasks, such as admittance and dispatching of patients, organised in one centralised unit. This was something also mentioned by David Nicolás Ocejo, who argued that centralising these activities enables efficient use of resources.

6.6 Scaling HaH

When it comes to scaling, the three different cases do it in three different ways and have different goals with their scaling. AP-HP have a long history of providing care in the home, and has the largest capacity of the HaH-programs being studied. Niccolo Curatolo explained that when the program grows, it is mainly by coping the existing unit structures and adding it to the organisational structure with central administration and specialist support. This is possible since processes and routines are standardised and each unit is expected to be able to handle the same patients. This means that when the program grows, the difference is mainly that a new geographical area is covered by the program, but processes and routines stay the same. This way of scaling resembles a more modular form of scaling, where the growth of the program does not always require major organisational structure changes and is only possible by having standardised routines, established coordination mechanisms and centralised administration.

However, scaling of the HaH-program in Iceland requires greater local adaptation, because the primary care centers are expected to develop their own HaH-model based on local conditions and resources. This creates a bigger difference between centers, and places more responsibility on the individual centers to create routines that work for them. It also creates a greater need for coordination between the hospital and each primary care center, as the increasing variation between local models makes integration and coordination across the HaH-program more complex. Expanding this program is therefore about adapting the model to local conditions and creating coordination between different actors in the network.

The need for integration becomes especially clear as HaH expands and the organisation becomes more complex, which aligns with Lawrence and Lorsch (1967), who argue that increasing organisational complexity leads to greater differentiation. When the organisation grows with more patients, professions, pathways, and external actors, the need for coordinated structures increases. Johnny Chan emphasised this, arguing that what works for an organisation with approximately 20 beds does not necessarily work when the volume increases to around 100 beds. On a smaller scale, informal solutions such as communication through WhatsApp and other ad hoc working methods can serve as effective tools for coordination, but these become difficult to maintain as the model expands. As the organisation grows, differentiation increases, thereby

increasing the need for integration and creating a greater need for more formal structures for coordination and collaboration.

6.7 Redesigning the System

Denecke et al. (2024) emphasise that it is not as easy as just moving the care from the hospital to the patient's home. When moving the care out from the hospital, there is a need for new routines and procedures. The home is less standardised, the personnel is more alone, the patient's social situation matters more, and the boundaries of responsibility become less distinct. This is demonstrated by Johnny Chan, who highlighted that the distribution of responsibility within HaH-programs may differ from that of traditional hospital care. This can make it important to reflect on which processes are necessary and which are maintained primarily because they have traditionally been performed in a certain way, especially if the processes originate from hospital care. Hospitals are often highly standardised with support from colleagues readily available in close proximity, which may mean that routines are not directly transferable to HaH-care. However, Nirit Pilosof explained that with this move of care, comes the possibility to redesign how to provide care, which is also mentioned by Johnny Chan. As HaH-care often does not simply involve transferring hospital care into the patient's home, it requires a different type of competence to provide care in the home. New competencies are also needed in other parts of the healthcare system such as training physicians and nurses to conduct assessments remotely, if telehealth is used in the program. Newton et al. (2024) further highlighted the need for flexibility and adaptability when providing care in the patient's home, qualities that Johnny Chan also emphasised as important competencies within HaH-programs.

In relation to this type of care, Johnny Chan and David Nicolás Ocejo described how they rely on in-house training to develop competencies specific to their respective HaH-programs. This suggests that much of the knowledge required to operate within HaH settings is currently developed within practice rather than being formally integrated into university education. At the same time, several interviewees emphasised that it would be beneficial if content related to virtual care and remote clinical work were incorporated into university curricula, a need also identified by Newton et al. (2024). This may indicate a gap between academic education and clinical practice, where universities have not yet fully adapted to the competencies required for delivering care through telehealth and in patients' homes. As a result, healthcare organisations are required to compensate through internal training systems, which may lead to variability in how competencies are developed across different HaH-programs. This raises questions about standardisation, preparedness of newly graduated healthcare professionals, and the long-term integration of HaH-related competencies into formal healthcare education.

6.8 Limitations

The choice to only include three HaH-program in high income countries may limit the generalisability of the findings across different healthcare settings and in resource constrained settings. The exclusion of perspectives from patients and their relatives may have led to certain organisational aspects being overlooked, such as whether the patients perceive routines as functioning effectively in the home setting and whether they consider staff to be adequately trained.

This study does not include interviews with stakeholders from other services that have some coordination and collaboration with HaH-programs, such as primary care, ambulance services or nursing homes. This may mean that potentially valuable perspectives from stakeholders are missing. Furthermore, the people interviewed in the case interviews were highly involved in

the development of their HaH-program but were not, in most cases, directly responsible for delivering care in patients' homes, which may have influenced the perspectives captured in this study.

7

Conclusion

The following section aims to answer the research questions by briefly summarising the findings on how the three programs are organised and important aspects of organising and scaling HaH-programs. In addition, possible future research is presented.

7.1 Organisation of Three HaH-programs

The comparison between the three different programs shows both similarities and differences. In Singapore, NUHS@Home operates as an independent centralised unit, covering all hospitals in the region. The patient volume is approximately 120 patients per day, with the majority being acute medical patients. The focus is on scalability and standardisation to improve efficiency and support future growth.

In Iceland, HSU Home Hospital is instead organised under primary care, with strong local adaptation with each primary care center developing their own model. Close collaboration between home nursing services, primary care centers, and the hospital was also considered important. The capacity is around 210 patients per year, treating mainly frail, elderly, and multimorbid patients. The rural setting and long geographical distances made flexibility, coordination, and the use of technology especially important.

Lastly, in France, AP-HP HAD is organised through several local units, each responsible for a certain geographical area. Administrative tasks, such as admission to the HaH-program, and specialist support are centralised. The patient volume is around 900 patients per day, including a wide range of care covering all ages. The care is mainly based on in person visits, with a limited use of technology.

7.2 Important Aspects of Organising HaH

By comparing the different HaH-programs across the world, it has become clear that there might not be a single optimal way to organise HaH-programs. Despite the international definition, HaH-programs also differ from each other, making a comparison harder. Therefore, the organisational structure of the program must be adapted to the local healthcare system including reimbursement models, geographical conditions such as rural versus urban, and the goals of the program. It must be decided whether the program should have a general approach or a more specific approach that focuses on certain conditions.

Some recurring aspects were identified. Firstly, the challenge is not whether HaH should be completely separated or integrated, but how organisations balance sufficient differentiation to support HaH-specific competencies with enough integration for the program to operate effectively in the healthcare system. Secondly, to be able to scale the clinical scope must be broad

enough to generate volumes that make the program sufficient while maintaining strong specialist support to ensure quality and patient safety. Thirdly, a lack of reimbursement models adapted to HaH-care and financing incentives was identified as a key challenge in expanding HaH.

Most of the programs were organised around general teams with access to specialist support when needed. What is also clear is the fact that scaling HaH-programs is not only about the clinical care, but also about logistics for the patient and care team, management of the program, collaboration with other healthcare services, and the sharing of information. Finally, HaH should not simply be seen as moving hospital care into the patient's home. Instead, it often requires redesigning healthcare processes, developing new competencies, and adapting healthcare systems to support care delivery outside of the traditional hospital setting.

7.3 Future Research

Future research is needed to explore how financial aspects affects the organisation of HaH-programs. With focus on how incentives and funding models can support or hinder the scaling of HaH-programs. If there is a difference between fee-for-service/activities, bundled payment, publicly funded or insurance based in regards to the development of HaH-programs.

Another relevant area for future research would be to examine whether HaH-program could make the healthcare sector more attractive for professionals who have previously left the sector, and whether the development of HaH-program therefore could influence future workforce availability and resource capacity.

Lastly, another area for future research would be to explore the attitudes and awareness towards HaH-programs of stakeholders who are not directly employed within HaH-programs, such as primary care and emergency services, and how they perceive and understand these models. Furthermore how these perceptions may affect coordination and collaboration between the HaH-program and other services in the community.

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A

Appendix A: Interview Guide for Informant Interviews

- Can you briefly describe your background and experience working with Hospital at Home?
  - What is your definition of Hospital at Home? How would you describe HaH?
- If the interviewee works at a hospital:
  - Can you describe your HaH-program and how it is organised? How has the program developed over time? Has it always been organised in this way? Were there any key decisions or strategic choices that had to be made during its development?
- Some hospitals integrate HaH into their existing organisational structure, while others operate it as independent units. From your experience, what organisational approaches have you seen, and which differences seem most important?
  - What do you see as pros and cons with these ways of organising?
  - Can you share examples from different hospitals or countries?
- What is required organisationally for a HaH program to function well?
- What factors influence how HaH programs are organised across different hospitals? What are important factors when deciding how to organise a HaH program?
- Do you foresee or have you experienced any organisational challenges as HaH programs grow?
- At what point does a hospital's traditional organisational model become insufficient for HaH?
- What are your thoughts on how to address the challenges you mentioned earlier with growing HaH-programs?
- How do you think the organisation of HaH will evolve in the future? What will be most important from an organisational perspective going forward?
- Anything else we should know/any other thoughts? Is there anyone else you think we should talk to?

B

Appendix B: Interview Guide for Case Interviews

Background

- Can you briefly describe your background and your role working with Hospital at Home?
- What is your definition of Hospital at Home? What type of care is included in your program?
- Do you provide other healthcare services in the patient's home?
  - If so, why have you decided to separate this from your HaH? Are there any plans on including/combining them in the future?
- How long has your Hospital at Home program existed?
- How has your model evolved over time? Are there any key decisions or events, other than COVID-19, that shaped the current model?
- In what ways does home-based hospital care differ from traditional inpatient hospital care in your context?
  - Do these differences primarily relate to working methods, competencies, responsibilities, or planning?
  - Are there specific aspects of care that become particularly different when it is delivered in the home setting?
- Which are the largest patient groups included in your program?
  - Do you plan to bring in other patient groups?
- Are there multiple referral pathways into your Hospital at Home program?
- What are your inclusion and exclusion criteria?
- What technological tools do you use to treat, monitor and contact the patients?
- Do you need other/new competencies in running your program?
  - New ways of providing care/new techniques because of being in the patients home?
  - Technical staff? Couriers?
- Do you collaborate with other healthcare providers or services to ensure that the model works effectively?
  - Where does the need for coordination tend to be greatest?

  - What are the consequences when collaboration does not work as intended?

- What was the original purpose of implementing your program? Has it changed since the program was introduced?

Organisation

- How have you organised your HaH-program? Why did you choose this particular structure?
- What advantages and disadvantages do you see with the model you have chosen?
- Has there been a point where it became difficult to manage the service within the traditional organisational structure, or have you always been organised in the way you are today?
  - What led to the change?
  - Was it driven by an increase in patients, more teams, more involved units, or other factors?
- What signs indicated that the previous organisational structure was no longer sufficient?
  - Unclear allocation of responsibilities?
  - Too much reliance on individual staff members?
  - Coordination challenges?
  - Difficult to scale or expand the service?
- When the organisation grows and becomes more complex, what do you believe is the most important for it to work?
  - Clearer responsibility?
  - More coordination between?
  - Common working methods/routines?
  - Dedicated coordination roles?
- How have you thought about specialisation vs generalisation when building your HaH team?
- How do you think the organisation of HaH will evolve in the future? What will be most important from an organisational perspective for HaH to continue to grow?
- Anything else we should know/any other thoughts? Is there anyone else you think we should talk to?

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