Experiences with decentralized acute healthcare services from different stakeholders’ perspectives. A mixed methods study.

Ann-Chatrin Linqvist Leonardsen
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## Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ADMS</td>
<td>The Administrative Collaborative Board in Østfold</td>
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<tr>
<td>CAH</td>
<td>Critical Access Hospital</td>
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<td>CCI</td>
<td>Charlson Comorbidity Index</td>
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<td>CH</td>
<td>Community Hospital</td>
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<tr>
<td>CI</td>
<td>95% Confidence Interval</td>
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<tr>
<td>COPD</td>
<td>Chronic Obstructive Pulmonary Disease</td>
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<tr>
<td>CR</td>
<td>Coordination Reform</td>
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<tr>
<td>DLP</td>
<td>Drug-Related Problem</td>
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<tr>
<td>EQ-5D-3L</td>
<td>EuroQoL-5 dimension-3 level</td>
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<tr>
<td>GP</td>
<td>General Practitioner</td>
</tr>
<tr>
<td>GPH</td>
<td>General Practitioner Hospital</td>
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<tr>
<td>HAH</td>
<td>Hospital at Home</td>
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<tr>
<td>HOD</td>
<td>Norwegian Ministry of Health and Care Services</td>
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<tr>
<td>HW</td>
<td>Hospital Ward</td>
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<tr>
<td>IC</td>
<td>Intermediate Care</td>
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<tr>
<td>ICC</td>
<td>Intraclass Correlation Coefficient</td>
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<tr>
<td>ICD-10</td>
<td>International Classification of Diseases</td>
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<tr>
<td>ICPC-2</td>
<td>International Classification of Primary Care</td>
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<tr>
<td>IC</td>
<td>Intermediate Care</td>
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<tr>
<td>MAW</td>
<td>Municipality Acute Ward</td>
</tr>
<tr>
<td>NLU</td>
<td>Nurse-Led Unit</td>
</tr>
<tr>
<td>NORPEQ</td>
<td>The Nordic Patient Experience Questionnaire</td>
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<tr>
<td>NPR</td>
<td>National Patient Registry</td>
</tr>
<tr>
<td>NSD</td>
<td>The Norwegian Social Science Data</td>
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<tr>
<td>Acronym</td>
<td>Full Form</td>
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<tr>
<td>OECD</td>
<td>Organisation for Economic Cooperation and Development</td>
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<td>OR</td>
<td>Odds Ratio</td>
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<tr>
<td>PCC</td>
<td>Patient-Centred Care</td>
</tr>
<tr>
<td>PCMH</td>
<td>Patient-Centred Medical Home</td>
</tr>
<tr>
<td>PPE-15</td>
<td>Picker Patient Experience Questionnaire-15 item version</td>
</tr>
<tr>
<td>REC</td>
<td>Regional Committees for Medical and Health Research Ethics</td>
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<tr>
<td>SD</td>
<td>Standard Deviation</td>
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<tr>
<td>SPSS</td>
<td>Statistical Package for the Social Sciences</td>
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<td>WHO</td>
<td>World Health Organization</td>
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### Definition of central concepts

<table>
<thead>
<tr>
<th>Concept</th>
<th>Definition</th>
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<tr>
<td>Comorbidity</td>
<td>Two disorders or illnesses occurring at the same time in the same person. Comorbidity implies interaction between the illnesses affecting the course and prognosis of both (1).</td>
</tr>
<tr>
<td>Decentralization</td>
<td>Transfer of financial or policy power from a central to a less central authority (2).</td>
</tr>
<tr>
<td>ICD-10</td>
<td>International statistic classification of diseases and related health problems (3).</td>
</tr>
<tr>
<td>ICPC-2</td>
<td>International classification which is used for documentation of the reason for contact with primary healthcare services (4).</td>
</tr>
<tr>
<td>Multimorbidity</td>
<td>The co-occurrence of two or more chronic medical conditions in one person. Multimorbidity is more than the sum of the single diseases and results in complex disease patterns (5).</td>
</tr>
<tr>
<td>Patient safety</td>
<td>Any unintended or unexpected incident that is judged to have led to, or to potentially lead to, patient harm (6).</td>
</tr>
<tr>
<td>Urgent or immediate healthcare</td>
<td>The range of responses that health and care services provide to people who require, or who experience a need for, urgent advice, care, treatment or diagnosis (7, 8).</td>
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WHAT THIS THESIS IS ABOUT (SUMMARY)

**Background:** One of the key measures of the Norwegian Coordination Reform (CR) was the establishment of municipality acute wards (MAWs), which aimed at offering a decentralized 24-hour acute healthcare service as an alternative to hospitalization. The Norwegian Ministry of Health and Care has stated that these new services should be of the same or even better quality as those provided by hospitals. There is a growing recognition that patients’ perspectives are essential in achieving high quality care and that positive patient experiences are associated with clinical effectiveness as well as patient safety. Consequently, exploring patient experiences may be essential for the development of new healthcare services, as well as the improvement of existing ones. Moreover, professional attitudes are a potential source of resistance to changes in the healthcare system. Because MAWs are based on referral from general practitioners (GPs), the latter’s perspectives on the use, or lack thereof, of these services, may provide important insight into aspects of care they deem clinically important. However, research exploring the perspectives of key stakeholders, including patients and GPs, on these services is lacking. Since Østfold was the first Norwegian county to establish MAWs covering all of the municipalities, this setting was viewed as ideal.

**Aim:** The aim of the studies presented in this thesis was consequently to explore different stakeholders’ perspectives on and experiences with the treatment and care quality of decentralized acute healthcare services in MAWs.

**Methods:** The thesis has a mixed methods design, consisting of three studies. The studies were conducted in a county in southeastern Norway and included five different MAWs. In the first study, semi-structured interviews with 23 GPs from the five MAW catchment areas were conducted. Patient experiences were explored using a mixed methods approach. First, semi-structured interviews were conducted with 27 patients discharged from the five MAWs, to explore how patients who had normally been admitted to hospitals experienced receiving treatment in MAWs. Thematic analysis was used to analyse the data. Second, the Picker Patient Experience Questionnaire-15 item version (PPE-15) was utilized to investigate patients’
experiences and potential predictors of these experiences (socio-demographic variables, comorbidity, length of stay and self-rated health). Patients were recruited at discharge from the five different MAWs (n=479) during the one-year period June 2014 – June 2015. Descriptive statistics, Mann Whitney U test, Intraclass Correlations, Cronbach’s alpha and binomial linear mixed model analysis were used to analyse the data.

**Results:** The first study showed that GPs experienced challenges in deciding which patients were suitable for treatment at a MAW, including whether patients could be regarded as medically clarified, and whether these services were sufficient and safe. GPs were also under pressure from several other stakeholders when deciding where to refer their patients. Moreover, the MAWs were viewed not merely as an alternative to hospitals, but also as a service in addition to hospitals. The patient interviews identified that the participants reported the treatment in MAWs to be comparable to hospital care, although they nevertheless experienced limitations. Participants spoke positively about MAW personnel and the advantages of a single patient room, a calm environment and proximity to home. Verbal and non-verbal communication and a sense of being seen and looked after as a whole human being or ‘a person’ beyond the disease itself in the MAWs were contrasted to earlier hospital experiences. These findings supported the GPs’ experience that patients wanted to stay in MAWs rather than in hospital. The third study added another perspective to the patients’ experiences, identifying several aspects that needed improvement related to treatment and care in the MAWs. Most of the problems experienced by patients were related to continuity and transition, while the fewest number of problems were related to respect for patient preferences. The Charlson comorbidity score was the only variable that negatively influenced patient experience.

**Conclusion:** Patients’ and GPs’ experiences highlight several supportive and contrasting perspectives on decentralized acute healthcare services offered in MAWs. To the GPs, the limitations in diagnostic and specialist services indicated uncertainty regarding whether the MAW services were sufficient and safe, while these limitations did not impact patient experiences of quality and safety.
These findings show that it is important to include several stakeholders when planning, implementing and redesigning MAWs, or other alternatives to general hospitals, as well as in quality improvement initiatives in healthcare services in general.
**HVA HANDLER AVHANDLINGEN OM? (SAMMENDRAG)**

**Bakgrunn:** Et av hovedtiltakene i den norske Samhandlingsreformen (SR) var etableringen av Kommunale Akutte Døgnplasser (KAD). Disse enhetene har som formål å tilby desentraliserte akutte helsetjenester som et alternativ til sykehusinnleggelse. Helse- og omsorgsdepartementet har påpekt at kvaliteten på tjenestene som ytes i disse enhetene skal være av samme eller bedre kvalitet som sykehus. Det er økende anerkjennelse for at pasienters perspektiver er sentrale for å oppnå kvalitet i helsetjenesten, og for at positive pasienterfaringer er assosiert med effektivitet så vel som pasientsikkerhet. Som en konsekvens kan det å utforske pasienters erfaringer være essensielt ved utvikling av nye helsetjenester, så vel som ved forbedring av eksisterende tjenester. Videre kan profesjonelle holdninger være en potensiell kilde til motstand mot endringer i helsevesenet. Siden KAD baserer seg på henvisning fra fastleger vil deres kliniske vurderinger og perspektiver være sentrale for å tydeligere forstå bruk eller manglende bruk av disse tjenestene. Til tross for dette er forskning som utforsker perspektivene til nøkkelpersoner på de nye KAD enhetene, slik som pasienter og fastleger, svært begrenset. Siden Østfold fylke var først ut i Norge til å etablere KAD knyttet til alle fylkets kommuner, ble denne studiesetting ansett som ideell.

**Hensikt:** Den overordnede hensikten med studiene som presenteres i denne avhandlingen var å utforske ulike nøkkelpersoners perspektiver på og erfaringer med kvaliteten på behandling og pleie ved desentraliserte akutte helsetjenester som tilbys i KAD.

**Metode:** Denne avhandlingen har et ‘mixed methods’ design, og består av tre studier. Studiene ble gjennomført i et fylke i sør-øst Norge, og inkluderte fem ulike KAD enheter. I den første studien ble det gjennomført semi-strukurerede intervjuer med 23 fastleger fra hvert av de fem KAD enhetenes nedslagsfelt. Pasienterfaringer ble utforsket med bruk av ‘mixed methods’. Først ble det gjennomført semi-strukurerede intervjuer med 27 pasienter utskrevet fra hver av de fem KAD enhetene, for å utforske hvordan pasienter som normalt ville blitt innlagt på sykehus erfarte å motta behandling på KAD. Tematisk analyse ble benyttet for å


**Konklusjon:** Pasienters og fastlegers erfaringer viser flere sammenfallende og kontrasterende perspektiver på desentraliserte akutte helsetjenester tilbudt i KAD enheter. Begrensningene i diagnostiske- og spesialist-tjenester indikerte usikkerhet for fastlegene hvorvidt KAD tjenestene var tilstrekkelige og trygge, mens dette ikke påvirket pasientenes erfaringer av kvalitet og sikkerhet. Disse funnene viser at det er viktig å inkludere ulike interessenter ved planlegging, implementering og
videreutvikling av KAD enheter, eller andre alternativer til sykehus, så vel som ved
kvalitetsforbedringstiltak i helsetjenesten generelt.
LIST OF PUBLICATIONS

This thesis is based on the following papers:


III Leonardsen AL, Del Busso L, Grøndahl VA, Jelsness-Jørgensen LP. ’It’s a whole human being’: A qualitative study of care experiences among patients treated in decentralised healthcare services. EJPCH (accepted for publication July 6th 2016, in press)

1.0 INTRODUCTION AND STATE OF KNOWLEDGE

1.1 Demographic trends and future healthcare challenges

Demographic trends reveal that people are living longer than ever before. For instance, the proportion of people aged 80 or above is growing faster than any other segment of the population. Furthermore, the share of the population aged 65 or above is estimated to increase from 17.4% in 2010 to 30.0% in 2060 (9). In Norway, the proportion of those aged 80 or more is estimated to increase from approximately 4% in 2014 to about 10% in 2060 (10). In addition to these demographic changes, chronic diseases and conditions are on the rise worldwide. Patients with such conditions are in need of both medical treatment and extensive healthcare services (11, 12).

Out of the total number of hospitalizations, 90% are emergency admittances. Despite increasing treatment complexity, as well as an increasing number of older patients, hospital length of stay is decreasing (13-16). Not only do these societal changes challenge the structure, finances and capacity of acute healthcare services (17), they also affect primary healthcare services. The latter trend, in particular, has resulted in an increased need to offer accessible healthcare services both prior to and after hospitalization, as well as alternatives to acute hospitalization.

As a consequence, there is a growing need to rethink how healthcare could be organized more effectively (18-25).

1.2 Healthcare services development in Norway: a short historical background and overview

As a consequence of the Hospital Act of 1969 (26), the responsibility, both financial and political, of most other hospitals was transferred to each of the 19 Norwegian counties with only a few highly specialized hospitals in Norway remaining under state ownership. However, from 1985, primary care became the responsibility of the municipalities, and in 2002, the healthcare system model was switched from decentralized to centralized financial and political authority. The central government
assumed responsibility for all somatic and psychiatric hospitals and other parts of specialist care in order to control and impact budgets, ensure regional equity in the supply of hospital services, and improve the technical and cost efficiency of services (27).

Nowadays, the healthcare system in Norway is divided into two levels. The state is responsible for specialist healthcare services, including hospitals, outpatient services and emergency services, while the municipalities are responsible for primary healthcare, including general practice, home-based care and nursing homes. Decentralized organizations have remained or been established during the periods of decentralization and centralization. These include for example General Practitioner Hospitals, Sjukestugu i Hallingdal, or Hospitals-at-home.

1.2.1 General Practitioner Hospitals

In rural parts of Norway, for instance in Finnmark county, community healthcare services have been offered, since the 1800s, in ‘Sykestuer’ (known in English as General Practitioner Hospitals (GPHs) or cottage hospitals). These units provided treatment for several medical conditions and also, when possible, made it possible to avoid hospitalization. Following a series of periods of centralization, most GPHs have been shut down: In 1972, there were 64 GPHs with 1005 beds in 15 of the counties in Norway (28), while in 1994 there were only 171 beds (29).

Finnmark county in northern Norway is one of the few places where decentralized medical beds in GPHs still exist (in 2017). The time needed to travel by car from a GPH to a general hospital ranges from one to four hours. The GPHs are, as the name indicates, staffed by general practitioners (GPs) and offer basic treatment and care. The GPHs also offer diagnostic capabilities such as x-ray and laboratory facilities.

From 1990 to 1994 Aaraasen et al. (30) explored different aspects of these GPHs. They emphasized the positive effect of immediate access to life-saving treatment for acutely sick persons. In doing so they highlighted several issues: the typical patient at the GPH was admitted due to an acute condition and was discharged to the home after a few days. Even though a majority of patients were elderly, all age groups were represented, with a mean age of 61 years. GPs judged
that 61% of patients would have needed hospitalization if the GPHs did not exist. The GPHs were used for short stays and observation of medical problems (30). Moreover, they found limited negative consequences to being admitted to a GPH rather than a general hospital (permanent health loss in one of 73 patients, and a prolonged course of disease in one patient) (31). When referring patients to hospital, medical motives dominated GPs’ judgement regarding which level of care they should refer the patient to, while a need for care, long travel distances and patients’ and relatives’ wishes, as well as access to a GPH, were reasons why GPs referred to a GPH (32). Aaraasen et al. also found that the GPHs reduced the length of stay in hospital, due to initial non-emergency treatment in a GPH before hospital admission (33). Furthermore, they found that the local alternative to hospital led to a better access to healthcare services in rural areas at a lower cost (34). Hence, GPHs represent a low technology primary healthcare unit for clinical observations, treatment, rehabilitation and care of patients in need of more intensive medical care than can be provided at home or in a nursing home or who do not need general hospital care (33, 35, 36).

1.2.2 Sjukestugu i Hallingdal

The county of Hallingdal comprises six municipalities. Ringerike Sykehus (RS) is within 1–3 hours’ drive from the six municipalities and has a decentralized specialist healthcare service, namely Hallingdal Sjukestugu (HSS). HSS can be described as a community hospital (CH) with a somatic inpatient unit (14 beds), somatic and psychiatric outpatient clinics, a day treatment centre with dialysis and palliative care, and a digital X-ray satellite to the hospital (from 2016, HSS also offers computer tomography or CT) (37).

Experiences from HSS indicate that it is feasible to give a selected group of patients an alternative to acute admission to a general hospital (35). No significant differences related to health consequences between patients randomized to either the hospital (RS, n=27) or the local alternative (HSS, n=33) have been identified. Nevertheless, Lappegard and Hjortdahl (38) claim that their study indicates a consistent trend of health benefits rather than risk from acute admission to a community hospital as compared to a general hospital, due to a decrease in in-patient
stays and utilization of, e.g., home nursing services in patients discharged from the HSS compared to the RS. Furthermore, they found that geograhpy, characteristics of doctors and structural conditions were contributing local factors explaining differences in utilization of these services (38).

1.2.3 The Trondheim model

In Trondheim, several decentralized models for patient care have been established, for example the palliative care ward at Havstein Nursing Home, which provides primary care to cancer patients, with patient outcomes comparable to general hospital care (39), as well as the intermediate care department at Søbstad Teaching Nursing Home (STNH) (40). Twenty beds at STNH were reassigned in 2002 to be a community hospital (CH) providing intermediate level care. STNH offers treatment, care and rehabilitation to patients 60 years and older. Before admittance, the patients must be medically examined and clarified, and patients with severe dementia or mental illness are excluded. Patients are admitted to STNH after an initial hospitalization, hence this service is not an alternative to hospitalization. According to Garåsen (36), several CHs in Norway are comparable to CHs in England (41) and the Netherlands (42). Moreover, Garåsen found that the intermediate care level gives a better outcome, assessed as independency of community care, more patients have better functional status and significantly fewer patients are dead after 12-month follow-up (43). These results are consistent with other comparable studies (44-46).

1.2.4 Other initiatives

Several Hospital-at-Home initiatives have also been established in Norway, for example at the University Hospital in Northern Norway, which has, together with the municipalities Tromsø and Harstad, established patient-centred healthcare teams in which physicians, registered nurses (RNs), physiotherapists and pharmacists collaborate across organizations and levels of services (47). The aim is to decrease fragmentation of healthcare services, offering interprofessional competence through both primary and specialist services in the patients’ home.
1.2.5 Health service development in Østfold county

In Østfold county, where the three studies included in this thesis were carried out, seven independent local emergency medical systems were merged into one system in 1996, and subsequently integrated into the hospital organization. In 1998, four years ahead of the National Health Reform in 2002, five hospitals were merged into one organization, and the emergency functions at the smaller local hospitals were closed down. Studies have shown that Østfold was the only area in Norway where positive effects on both cost and technical efficiency were found as a result of the centralization of healthcare services (48).

1.3 The Coordination Reform (CR)

A Norwegian governmental report from 2005 described fragmented services, limited preventive efforts and demographic development as the main challenges in future healthcare services (17). In 2009, the Coordination Reform (CR) – ‘Proper treatment- at the right place and right time’ – was introduced as a direct response to the current and future estimated shift in societal demographics and public health (49). Both financial, juridical, organizational and professional measures were developed and presented in the National Health Care Plan in 2010 (50). The goals of the reform were to achieve 1) an increase in the proportion of patients receiving access to health services within their local community, 2) improved access to integrated multidisciplinary team-based care with either local service providers and/or higher level healthcare facilities, 3) an increased focus on generalist rather than specialist service provision when patient observation and treatment can be resolved without hospital admission, and 4) a reduction in travel time and expenses for both local healthcare providers and patients. The CR assumes that the municipalities will play a central role in meeting the growing demand for healthcare services, and has been gradually implemented between 2012 and 2016 (49).

In December 2015, a Norwegian Public Report (NOU) was presented with the title ‘First and foremost: An overall system for the handling of acute diseases and injuries outside hospital’ (8). The report aimed to describe an overall system that would meet the population’s need for safety in cases of acute illness and injury, and
included all initiatives and services outside hospitals, such as private initiatives, casualties (in Norwegian: Legevakt), general practitioners (GPs), home nursing services, MAWs, ambulance services and emergency telephone services. The report, like many other national reports, emphasized the existing challenges caused by fragmented healthcare services and highlighted a need for a stronger horizontal collaboration between the different health and care services in the municipalities.

1.3.1 Decentralization of acute healthcare services following the coordination reform

The municipalities’ responsibility related to immediate healthcare is rooted in the Norwegian legislation relating to municipal health and care services (Health and Care Services Act) §3-5 (51), which states that ‘The municipality has to offer a 24-hour health and care service to patients in need of immediate help. This obligation is towards patients and users the municipality might be able to diagnose, treat and offer care to’. This legislation was operationalized from 1 January 2016 as an obligation to offer a 24-hour acute bed service for eligible patients. Financial resources have been transferred from specialist healthcare services to the municipalities to provide somatic inpatient treatment (52).

One key outcome of the CR has been the development of acute wards in the municipalities offering a 24-hour acute service as an alternative to hospitalization. These wards have been given different names and descriptions, but the Norwegian Medical Association has put forward the concept of the ‘Kommunale akutte døgnplasser-KAD’. Since there is no general consensus on an English translation, the term used in this thesis is Municipality Acute Wards (MAWs) (53). However, other authors have used terms such as ‘Municipal acute bed units’ (MAUs) (54, 55).

The Norwegian Ministry of Health and Care Services (HOD) published a guide to help the municipalities with the establishment of these services (56), but the municipalities were free to decide how to organize them. The guide did not specify which patients were suitable for treatment at a MAW, but it targeted patients frequently admitted to hospital. More specifically, potential patients are: 1) stable patients with a clarified diagnosis whose main problem is a) an acute illness that can be examined and treated in a general practice setting, or b) worsening of a chronic
illness with a need to adjust treatment, and 2) stable patients with an unsettled diagnosis (not perceived as critically ill) who are in need of observation. The guide settled that the municipalities’ acute healthcare services have to be regulated in collaborative agreements between the municipalities and regional health trusts. MAWs are to follow norms that include having to fulfil the demand for justifiability, patient security and quality, and that the quality of these new services has to be of equal, or even better, quality than hospital services (51).

Throughout Norway, MAWs are organized based on different models including in nursing homes, in ‘houses of health’, in local medical centres, in relation to a casualty, in relation to a hospital or a GPH, and as municipal or inter-municipal wards. The most frequent solution is to establish MAWs in nursing homes (57).

MAWs have organized physician staffing in different ways. Some places have employed their own doctors dedicated to the service on a 24-hour basis, while other places have employed their own doctors only during daytime. Another solution, which currently is the most common one, is that nursing home physicians serve the MAWs during the day, while physicians from the casualty serve the MAWs during out-of-office hours. The last solution represents different models, involving either GPs, nursing home doctors or other doctors. All of the MAWs have daily doctors’ visits on weekdays, but not all of them offer this service on weekends (58, 59). Moreover, the MAWs differ in terms of size and services offered (55).

Skinner (60) described most municipalities/hospital trusts as passively collaborative, namely not formalizing their collaboration, and some as actively collaborative practicing an extensive collaboration related to competence measures and routines. Furthermore, studies have emphasized that the collaborative partners (MAWs and hospitals) do not feel equal (61, 62). A low percentage of utilization (average 34%) was described during the years 2013–2014, even if this number is increasing. To explain the low utilization of MAW beds, evaluation reports emphasize GPs’ and casualty physicians’ lack of knowledge and trust in the MAW services (57, 63).

Furthermore, Swanson and Hagen (64, 65) estimated that hospitalizations of elderly individuals (age above 80 years) who were acutely admitted to internal medicine wards in hospital were reduced by approximately 1.5–2% because of the MAWs. This effect was significantly stronger (about 5%) in MAWs with a physician present around the clock and located together with a casualty.
1.3.1.1 Efforts to improve collaboration in Østfold county

In Østfold, an administrative collaborative board (in Norwegian, Administrativt Samarbeidsutvalg, ADMS) has been established. The board includes five participants from the hospital and five participants from each of the MAW catchment areas. ADMS is an agency that facilitates discussion and collaboration between primary and specialist healthcare services. In line with the aims of the CR, ADMS collaborated on the establishment of a 24-hour acute healthcare service in the municipalities to reduce acute hospitalizations and to keep most of the acute patient pathways in the local community. The ADMS has developed an acute care guideline, which describes Østfold Hospital Trusts’ and the municipalities’ responsibilities when establishing MAWs.

On 18 September 2012, the ADMS decided to establish a clinical committee for acute healthcare (in Norwegian: ‘Klinisk utvalg ø-hjelp’, later changed to ‘Klinisk utvalg KAD’). The committee is made up of representatives from the municipalities, GPs, and a hospital specialist in internal medicine, as well as the manager of the hospital’s department of medicine and the emergency department. ‘Klinisk utvalg KAD’ has regular meetings to discuss relevant issues related to the MAWs and the MAW–hospital collaboration.

Seventeen (of the 18) municipalities in Østfold county participated in an agreement with the hospital on the establishment of MAWs. MAWs were established in Fredrikstad and Halden in November/December 2012, in Moss and Sarpsborg in January/February 2013, and in Askim in May 2013, as inter-municipal collaborations (Table 1). The county of Østfold was consequently the first of all Norwegian counties to establish such wards, covering all of the municipalities. Hence, the county provided an ideal setting for our study.
Table 1. The municipalities collaborating on each of the MAWs

<table>
<thead>
<tr>
<th>MAW (l)</th>
<th>Halden</th>
<th>Askim</th>
<th>Fredrikstad</th>
<th>Moss</th>
<th>Sarpsborg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipalities</td>
<td>Halden Aremark</td>
<td>Askim Eidsberg Hobøl Marker Skiptvedt Spydeberg Trøgstad</td>
<td>Fredrikstad Hvaler</td>
<td>Moss Råde Rygge Våler</td>
<td>Rakkestad Sarpsborg</td>
</tr>
<tr>
<td>n</td>
<td>31 734</td>
<td>50 591</td>
<td>82 539</td>
<td>59 350</td>
<td>62 212</td>
</tr>
</tbody>
</table>

Abbreviations and table legends: MAW(l)=municipality acute ward (location); Municipalities=names of collaborating municipalities; n=number of inhabitants as of March 2015.

The MAWs report monthly to central authorities as well as to the hospital. Based on these statistics, the three most frequent treatments at the MAWs in Østfold are (starting with the most frequent): oral medication, intravenous fluids and mobilization/pain relief. The most common conditions treated at the MAWs in 2015 were related to symptoms from the respiratory system (25%), muscle/skeletal system (15%), urinary tract (10%), digestive system (10%), and the metabolic/endocrine/nutritional system (9%). Moreover, the MAWs treated patients with symptoms related to the circulatory system, the immune and nervous systems and dermatologic symptoms, as well as psychiatric problems and strong nausea in pregnant women. During the year 2015, the MAWs had 2407 admissions, distributed across 8617 days of stay.

1.4 Decentralization of healthcare services in an international perspective

Several initiatives have also been implemented internationally to meet future healthcare challenges, aiming to ensure integration of services and teamwork in primary healthcare services (13, 66). The following examples are not exhaustive, but are included in this thesis due to their similar organization to MAWs.
1.4.1 Intermediate care units (IC units)

Intermediate care (IC) is an emerging concept in healthcare that may offer plausible alternatives to hospital care for elderly patients. The term ‘intermediate care’ was introduced in the United Kingdom’s NHS Plan and refined in the National Service Framework for Older People (67). Several very different definitions of IC are in use (68). Objectives such as ‘promotion of independence’ and ‘prevention of unnecessary hospital admission’ are to be achieved by providing a new range of services between hospital and home. However, no particular models of service delivery have been defined. Steiner (69) published eight definitions of intermediate care: Five of them focus on facilitating the transition from hospital to home, while other three include avoidance of admission and improvement of pre-acute and post-acute care (supported by (70, 71)).

Community hospitals (CHs) and nurse-led units (NLU) are the most common organizations referred to in IC literature (72-74). CHs focus on post-acute needs of older patients, and can be described as small hospitals, units or centres that provide a wide range of locally based outpatient and inpatient services (75). CHs have few diagnostic facilities or specialized services, and are located in rural areas, and in proximity to where people live (74, 76). NLUs can be described as units where nurses are primarily responsible for team leadership and care management, including admission and discharge decisions. NLUs are meant to have a more holistic approach than a hospital department (73).

Previous reviews differ regarding other outcomes from IC units; for example, one study showed no reduction in hospital admissions (77), while another found that early readmissions were reduced by approximately 50%, but that costs in NLUs were higher than those for inpatient stays (78).

1.4.2 Urgent care walk-in services

Urgent care walk-in services were developed to have a ‘see and treat’ approach to less serious, yet immediate, illness or injury (79). This approach was set up to address problems with, for example, treatment waiting times (80). There is significant variation in the care offered between the services for different conditions, for patients of different ages, and within services of the same name. There is also
great variation across different locations in terms of the services provided, clinical staffing, opening hours, protocols and overall quality of care (80). The centres offer treatment and care, but not 24-hour beds – patients are referred to hospital if admission is needed.

Urgent care walk-in services across England range from large, integrated care services that offer round-the-clock urgent care, GP services in- and out-of-hours, dentists, a rapid response team and radiology services, to minor injuries units that have variable access to healthcare specialists and diagnostics, which may not be available out-of-hours.

Evidence suggests that walk-in centres are not effective in reducing acute and emergency department visits, except when they are co-located and integrated with such units (81). The first study of GP-led walk-in centres indicated increased healthcare accessibility and that a large majority of the patients were satisfied with the service (82).

1.4.3 Critical Access Hospitals

Critical Access Hospital (CAHs) is a designation given to certain rural hospitals by the Centers for Medicare and Medicaid Services (CMS) in the US (83-85). CAHs are designed to reduce the financial vulnerability of rural hospitals and improve access to healthcare by keeping essential services in rural communities. CAHs provide round-the-clock emergency care services, have 25 or fewer acute care inpatient beds, and are located more than 35 miles from another hospital (84). The average length of stay is 96 hours.

CAHs have been associated with better outcomes measured by risk-adjusted rates of iatrogenic pneumothorax, selected infections due to medical care, accidental puncture or laceration, and scores on four Patient Safety Indicators (PSIs), but have no significant impact on the observed rates of death in low-mortality diagnosis-related groups (DRGs), foreign body left during procedure, risk-adjusted rate of decubitus ulcer, or scores on six PSIs (86).
1.4.4 Patient-Centred Medical Homes

Patient-centred medical homes (PCMH) are focused on people with chronic care needs, and have been established in the US since 2007, offering prevention and acute care (87, 88). Within the PCMH approach, patient-centred care is part of a broad organization of healthcare delivery, measured by practice indicators such as improved access procedures, the use of information systems to create disease registries and evaluate quality of care, care coordination within and across healthcare teams, processes to engage patients in health promotion and prevention, and regular surveys of patients’ experiences. The PCMH is not simply a place or a building, but a model of the organization of primary care (89). It is targeted at children, adolescents and adults, and the model is grounded upon four principles: physician-led practice, whole-person orientation, integrated and coordinated care, and focus on quality and safety (90). Evaluations of the PCMH model show an increase in patient satisfaction, better health and a reduction in the number of hospitalizations and rehospitalizations, as well as economic benefits (91).

1.4.5 Hospital-at-home

Other alternatives for acute care are based on enhanced care in the patient’s home through the municipalities’ home nursing services, in collaboration with a GP or with contribution from specialists in hospital, also known as ‘hospital at home’ (HAH) (92-94). When a patient with a chronic condition is admitted to a hospital’s emergency department, or even before the ambulance transports them from their home, a judgement is made concerning whether the patient could receive treatment and care from a hospital team at home. In patients with Chronic Obstructive Pulmonary Disease (COPD) or heart diseases, this model has been shown to decrease the number of hospitalizations (94, 95). Studies on stable elderly patients with a medical event such as stroke or COPD have indicated slightly more subsequent admissions in HAH groups and greater levels of satisfaction, as well as that the HAH was less expensive than hospitalization (96).

Several other decentralized healthcare services have been established, for example, in Australia, where a range of general practices and other primary
healthcare services (such as Aboriginal Community Controlled Health Services) have developed the competence and capacity to manage complex, urgent cases (97).

1.5 Patients’ experiences with decentralized acute healthcare

The Norwegian Knowledge Centre for the Health Services (98) performed a systematic review in 2014 to summarize the results of studies that compared patient outcomes for patients admitted to a supplemented primary care unit instead of a general hospital. Only three studies were judged eligible for inclusion (38, 45, 99). The conclusion was that it is possible that admission to a supplemented primary care unit provides slightly better patient satisfaction compared to hospitalization. However, the authors emphasized that the quality of evidence was low, and that there was insufficient scientific evidence to determine whether admission to lower level healthcare services affect patient outcomes such as physical functioning and quality of life when compared to hospitalization. The need for extensive research on decentralized healthcare services was highlighted throughout the report, and this was also emphasized in a central document from 2016 (100).

In Aaraas’ studies on GPHs, patient experiences were collected, but due to a low response rate, thorough analysis was not performed. Nevertheless, 88% of the 164 respondents considered the GPH the best alternative for themselves, while four of them would have wanted to be admitted to the general hospital (28).

Patient experiences collected from HSS were positively related to the small environment; patients mentioned the home-like atmosphere and geographical proximity to family and friends, as well as continuity in treatment and care, and a holistic approach (based on 6 patient interviews) (38).

Patients experienced being treated with respect and politeness, they got enough attention from the staff, and they got assistance at Søbstad Teaching Nursing Home whenever they needed it. They also felt confident of getting medical help when in need of a physician (40). The physicians and nurses at Søbstad follow some basic communication rules (101), for instance, allowing extra time, avoiding distractions by sitting alone with the patients, giving the patients an opportunity to ask questions and maintaining eye contact, which can partly explain these experiences.
Results from a PhD project exploring the role of an intermediate care unit in a clinical pathway also cohere with findings from IC units in other countries: patients emphasized the home-like, more patient-centred atmosphere in a small unit as opposed to stressful hospital wards (102).

In November 2015, the National Health and Hospital Plan was presented emphasizing the importance of what is best for patients, using the phrase ‘the patients’ healthcare services’ (47). The plan highlighted that patients’ knowledge and experiences have to be taken into account when deploying and implementing new services, as well as in quality improvement initiatives.

Internationally, studies have shown several benefits of IC units for older people, such as providing a home-like environment that contributes to a good recovery process (103, 104). Patients have reported a preference for being treated in the less busy and harried environment in small IC units over stressful and hectic hospitals (79, 105-107). Patient experiences have also been found to be more positive in small and rural hospitals than in larger and more urban hospitals (74, 108, 109), emphasizing a more flexible and patient-centred service (74, 104, 110). Moreover, patients have highlighted experiencing a greater sense of freedom, good meals and social gatherings with other patients, as well as personnel giving a sense of security and enabling patients to participate in decisions about their own care (74, 111). Negative experiences described include delays in receiving medication such as analgesics (112).

1.6 General practitioners and decentralized acute referrals

In 2014, Kairys (113) examined whether the implementation of the MAW in Oslo, or ‘Oslo KAD’ (73 beds), proceeded as intended. The study explored factors that could explain existing differences between a low rate of referrals from GPs to ‘Oslo KAD’ compared to the higher countrywide average. The participating GPs (n=8) argued that the organizational structure of the healthcare system in Oslo differs from other municipalities in Norway, since the casualty in Oslo receives more patients than other places, and therefore refers more patients. The participants claimed that GPs in smaller municipalities are far more integrated and linked to primary healthcare services, including MAWs. They also claimed to
suffer from a shortage of information about the MAW in Oslo. Even GPs who had received information experienced a lack of information about doctors, nurses, tests and available equipment at the MAW.

Moreover, respondents mentioned that communication tools between GPs and Oslo KAD needed improvement, since communication was conducted via telephone calls, which were deemed inefficient and time-consuming (supported by (114)). The GPs also cited the narrow admission criteria as a logistical obstacle, creating uncertainty for doctors, who then choose to refer to the hospital. Some reported that if they felt sure, then the patient could stay at home instead. The time factor was also highlighted: the GPs said that the Oslo KAD had only been open for a short time, and that it would take time for them to better understand the concept (113).

According to MAW employees, as well as healthcare leaders, GPs should have received necessary information about the MAWs’ services (57). In addition, GPs that refer to services they themselves are responsible for lack the possibility of getting ‘a second opinion’ from other doctors. Geographical proximity to patients’ homes has been seen as an advantage. These findings are based on interviews with healthcare leaders as well as employees at MAWs; the findings are assumptions of GPs’ perspectives and therefore constitute second-hand information (59).

Grimsmo et al. (58) conducted a field study of different stakeholders’ experiences with the planning and implementation of MAWs, allowing medical students (n=61) to deliver field notes and perform interviews while in practice in primary healthcare services. They found that GPs had not been involved in the planning process. In the MAWs included in this field study, only 20–30% of available beds were used (supported by Deloitte (59)).

Furthermore, Deloitte (59) performed a telephone interview study with 30 leaders of 30 different MAWs, as well as doctors and nurses in MAWs. According to these informants, the lack of a physician present 24 hours a day weakened the GPs’ trust in the service’s quality and safety. The informants also assumed that GPs did not want to spend any extra time on admitting to the MAW instead of to hospital. Admission criteria that are either too specific or not specific enough have also been reported as negative (59, 115).

Lappegard and Hjortdahl found that geography, characteristics of doctors and
structural conditions were contributing local factors explaining differences in utilization of acute decentralized services. GP-related factors were described as expertise and interest, tolerance for uncertainty and an ability to deal with conflicting opinions from patients, relatives and other health professionals. The location of the nursing home in relation to the GP’s office was noted as a structural factor. These findings were based on focus group interviews with healthcare leaders, and not GPs themselves (38).
2.0 THEORETICAL ASPECTS

2.1 Patient experience

In healthcare, the term ‘patient experience’ is used to describe what the process of receiving care feels like for the patients (116). Patient experience does not simply reflect clinical outcomes such as health-related quality of life, infection rates, or adherence-based outcomes (e.g., whether the patient takes a prescribed medication). The dimension that patient experience seeks to measure lacks a common definition, hence it is rather unique. In addition, there are multiple cross-cutting terms such as patient’s ‘satisfaction’, ‘engagement’, ‘perceptions’, and ‘preferences’. The terms ‘satisfaction’ and ‘experience’ are often used interchangeably despite their different meanings. Patient satisfaction has been described as the gap between patient expectations and experience. Patients’ reported experiences are considered to be less subjective than their reported satisfaction (117). A patient may be satisfied with the healthcare they have received, despite reporting a suboptimal experience, and vice versa (118, 119). Therefore, the validity and usefulness of satisfaction data is limited on its own, and has to be looked at as a whole together with patient experiences (120-122).

Information about patient experience is essential because it provides an opportunity to improve care, meet patients’ expectations, effectively manage and monitor healthcare performance, and enhance strategic decision making (123, 124). Nevertheless, some researchers have questioned the importance of patient experiences, due to the influence of factors such as a patient’s ‘general mood’ or response tendencies. Consequently, these perspectives may not mirror the actual quality of care, although a relationship between patient-perceived care and technical quality of care has been reported (125). Indeed, there are several critical aspects, such as, e.g., the fact that most patients lack formal medical training; hence, it may be argued that patients can not adequately assess quality of care.

Patient experience can be measured using mixed methods, quantitative, or qualitative approaches. The strength of the mixed methods design lies not only in providing the ‘full picture’, but in triangulating qualitative and quantitative data to
see if and where findings converge and what can be learned about patient experience from each method (126).

International organisations such as the Organisation for Economic Cooperation and Development (OECD) and the World Health Organisation (WHO) have emphasized the importance of the patient’s perspective by capturing patients’ experiences in the evaluation of the quality of healthcare delivery (127-129). When striving to achieve high quality care, capturing patient experience is essential: patient experiences have been found to be positively associated with clinical effectiveness and patient safety (130-133). All the Nordic countries have a history of measuring patient experience and patient satisfaction, although the instruments used in the different studies vary (127).

Patient experience is one of the national quality indicators in specialist healthcare services in Norway (134). Annual measurements of patient experience have been conducted in all Norwegian hospitals since 2011 (135). The primary purpose of these national patient experience surveys is related to quality improvement, healthcare management, public accountability and patients’ choice of hospitals (136).

2.2 Quality of care

The traditional Donabedian model for evaluating quality of care considers structure (e.g., characteristics of the healthcare delivery system), process (e.g., the care rendered by the system), and outcomes (e.g., health or vital status) (137). Previous research suggests that it is useful to distinguish these different dimensions when assessing quality (138-140). The concept ‘quality of care’ has been given different definitions depending on which culture it is examined in and whether it is looked at on an individual or a social level (132). In general, quality of care can be measured using implicit criteria (that healthcare professionals use their own individual judgments to determine the quality), or explicit criteria (that the care received is measured against criteria for what should be done) (141, 142).

Studies have shown that patient reports are not sufficient to assess technical quality of treatment and care (143). Hence, patients may experience healthcare services as safe and of good quality, which may, from a healthcare professionals’
perspective, be viewed as, e.g., limited and not so safe. Wilde et al. (144) developed a theoretical model of quality of care from the patient’s perspective, based on interviews with hospitalized patients using a grounded theory methodology (145, 146). The model presents patient preferences from four dimensions: the medical-technical competence of caregivers, the physical-technical conditions of the care organization, the identity orientation in the attitudes and actions of the caregivers, and the socio-cultural atmosphere of the care organization.

The medical-technical competence of caregivers dimension is implicit in the name. The physical-technical dimension includes a clean, comfortable and safe environment with good sanitary conditions, and food and drinks available. This dimension also includes availability of medical-technical equipment. The identity-oriented dimension describes patients’ desire for care with a human face in relation to the caregivers, presupposing caregivers with the knowledge and empathic skills to meet the patient as a unique person. The socio-cultural atmosphere of the care environment includes the patients’ desire for a humane physical and administrative care environment that as much as possible resembles a home rather than an institution. Furthermore, an environment where the patient has opportunity for self-chosen seclusion and/or socializing whenever he or she wishes is included in this dimension.

These patient preferences as related to healthcare quality have been supported in several studies; for example, Fadyl et al. support the dimensions of technical competence of care professionals, a human approach to service provision, and a context-appropriate response to needs as key aspects of quality of care (147).
3.0 STUDY AIMS

The overall aim of this thesis was to increase knowledge about the impact of decentralized acute healthcare services in MAWs from different stakeholders’ perspectives, namely to:

- investigate GPs’ experiences with and perspectives on MAWs (Study I, Paper I)
- explore patients’ experiences with treatment and care in MAWs (Study II, Papers II and III)
- investigate patients’ experiences with treatment in MAWs, as well as potential predictors of these experiences (Study III, Paper IV)
4.0 MATERIAL AND METHODS

4.1 Setting

The county of Østfold is situated in the southeastern part of Norway. It covers 3889
km² and consists of (as of 17 March 2016) 18 municipalities belonging to the
catchment area of Østfold Hospital Trust. The county has approximately 290,000
inhabitants.

Table 2 describes the health services offered at the five MAWs at the time of data
collection.
<table>
<thead>
<tr>
<th></th>
<th>Beds</th>
<th>Physician (p)</th>
<th>Physician (s)</th>
<th>Location</th>
<th>Diagnostics</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAW 1</td>
<td>4</td>
<td>08-22 (when needed)</td>
<td>22-08 (24 h)</td>
<td>Together with rehabilitation/nursing home/ward for patients ready for discharge Casualty in neighbour building</td>
<td>Selected blood sample analysis (extended analysis in 24 hours) Blood gas analysis No X-ray</td>
</tr>
<tr>
<td>MAW 2</td>
<td>7</td>
<td>24/7</td>
<td></td>
<td>Together with a short stay ward/ward for patients ready for discharge Casualty in same building</td>
<td>Selected blood sample analysis (extended analysis in 24 hours) Blood gas analysis X-ray/laboratory in same building</td>
</tr>
<tr>
<td>MAW 3</td>
<td>11</td>
<td>08-22 (when needed)</td>
<td>22-08 (24 h)</td>
<td>Together with a short stay ward Casualty in same building</td>
<td>Selected blood sample analysis (extended analysis in 24 hours) Blood gas analysis No X-ray Laboratory in same building</td>
</tr>
<tr>
<td>MAW 4</td>
<td>7</td>
<td>08-17 (when needed)</td>
<td>17-08 (24 h)</td>
<td>Together with nursing home/rehabilitation/palliative care Casualty in neighbour building</td>
<td>Selected blood sample analysis (extended analysis in 24 hours) X-ray in neighbour building</td>
</tr>
<tr>
<td>MAW 5</td>
<td>6</td>
<td>08-17 (when needed)</td>
<td>17-08 (24 h)</td>
<td>Together with nursing home/short stay ward</td>
<td>Selected blood sample analysis (extended analysis in 24 hours) No X-ray</td>
</tr>
</tbody>
</table>

Abbreviations and table legends: MAW=municipality acute ward; Beds=number of beds; Physician (p)=physician present, hours of presence (week-ends in parenthesis); Physician (s)=physician standby, hours available on phone, Casualty physician (week-ends in parenthesis); Location=physical location; Diagnostics=diagnostic services. All of the MAWs have daily doctors’ visits.
4.2 General methods (Papers I–IV)

A mixed methods design was chosen for this thesis. This involves the intentional collection of both quantitative and qualitative data, combining the strengths of each to answer the research questions, triangulating different methods to obtain different but complementary data on the same topic (148, 149). When exploring patient experiences, the mixed methods design might enhance the credibility and authenticity of the findings by providing supporting evidence and offering an opportunity to match evidence from multiple data sources (150, 151).

Table 3. Overview of the studies

<table>
<thead>
<tr>
<th></th>
<th>Design</th>
<th>Method</th>
<th>Data collection</th>
<th>Analysis</th>
<th>Papers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study I, II</td>
<td>Descriptive</td>
<td>Qualitative</td>
<td>Semi-structured interviews</td>
<td>Thematic</td>
<td>I, II, II</td>
</tr>
<tr>
<td>Study III</td>
<td>Descriptive Explorative</td>
<td>Qualitative</td>
<td>Questionnaires</td>
<td>Summative statistics, Mann Whitney U, Cronbach’s alpha, Intraclass Correlation, Binomial linear mixed model</td>
<td>IV</td>
</tr>
</tbody>
</table>

All patients discharged in the period June 2014 – June 2015 were intended to be invited to participate in the quantitative study. Invitations to participate in interviews (patients) were based on participation in this study.
4.3 The qualitative studies (Papers I–III)

Qualitative methods are well suited for exploring the experiences and perspectives of persons, particularly in areas of limited scientific knowledge (152). Study I and II had a qualitative design which included the use of semi-structured interviews and thematic analysis (as described by Braun & Clarke, (153)) to analyse the data.

In the psychological tradition, the term phenomenology is used when exploring what experiences are like, including the individual embodied experience (154). In qualitative research, a phenomenological approach aims at understanding social phenomena from the participants’ own perspective (155). When developing the interview guide, and during the interview process, the researchers’ concern was with exploring patients’ experiences of staying at a MAW on a phenomenological level.

Reflexive practice, including the scrutiny of the PhD candidate’s own impressions, positioning and emotional investments, was applied throughout the data collection as well as during the analysis, (156, 157). After each interview, the PhD candidate wrote down initial impressions, thoughts and feelings, possible discourses and power positions as well as other non-verbal communication from the interview situation. The aim was to achieve ethical and fair interpretations during analysis, as well as to be better prepared before the next interview.

4.3.1 Methods Study I (Paper I)

4.3.1.1 Participants and procedure

The aim was to utilize a stratified, random probability sampling method. The names of all of the GPs in Østfold county were collected from an official website (n=242) (158). They were separated according to the MAW catchment areas to which their patients belonged, and five GPs from each area (n=25) were drawn from an envelope by an administrative employee at the hospital’s research office. Written information about the study was sent to the GPs by mail, along with an invitation to participate in interviews. Only one of the GPs accepted the invitation. A reminder was sent, leading to one additional interview. An additional 25 GPs were invited, sampled
stratified and random. Invitations were sent out, as well as a second reminder, with only five new GPs accepting to participate in the study.

The GPs in the municipalities have regular meetings three to four times a year. The PhD candidate invited herself to these meetings to give GPs information about the studies and to try to motivate them to participate. This led to one additional participant being recruited. As this process indicates, it was challenging to recruit GPs. GPs expressed that they found the study important and interesting, but that they did not have any spare time to use for such purposes.

As a last solution, all of the GPs in Østfold were invited, both by mail and by e-mails sent via the hospital’s communication and collaboration manager. During the period May 2014–February 2015, 23 GPs were interviewed.

4.3.1.2 Data collection

An interview guide was developed informed by literature on quality and safety in healthcare, evaluation surveys of the implementation of the CR conducted with healthcare leaders (59) and several discussions among the researchers (Appendix 1). The guide included themes such as ‘patient categories suitable to stay at a MAW’, ‘collaboration between the MAW and the GPs’, and ‘the GP’s perception of the personnel and the treatment possibilities at the MAW’, and included questions such as ‘Can you describe a situation were you chose to refer the patient to a MAW?’, ‘In which situations would you choose to refer the patient to the hospital?’ and ‘If you compare your perceptions of the MAWs’ services to that of the hospital, are there differences? Similarities?’

The interviews were conducted by the PhD candidate at the GPs’ offices, either in their consulting room or in a break room in the same building. The GP interviews lasted approximately 22 to 85 minutes, with an average of 36 minutes. All interviews were audiotaped and transcribed verbatim the same day or the next day.
4.3.2 Methods Study II (Papers II and III)

4.3.2.1 Participants and procedure

Along with the questionnaires used in the quantitative part of the study (described under 4.4.4), the 100 first patients who had been invited at each of the MAWs received an invitation to also participate in an interview. Patients willing to be interviewed signed a consent form and returned this together with the completed questionnaire to the PhD candidate’s office address. An additional 79 patients accepted to participate, but were not included in the study due to methodological considerations/resources. Once consent had been received, participants were called to schedule the interview.

Inclusion criteria were that a) the patient should be at least 18 years old, b) the patient should not be cognitively impaired and c) the patient should have stayed at the MAW at least 24 hours. One of the participants turned out to have stayed at the MAW for only a few hours and was consequently excluded. According to Sandelowski (159), determining an adequate sample size in qualitative research is a matter of judgement and experience in evaluating the quality of the information provided in relation to the aims of the study. We aimed to include five participants from each of the MAWs. Participants were included consecutively as their consent forms were received. As a consequence, we did not include five patients from each MAW catchment area: data replication indicated that theme saturation was reached when 25 interviews had been conducted (160). An additional three interviews were conducted to ensure that no additional themes were identified.

The interviews took place from 14 to 21 days after discharge, between June and December 2014. All of the interviews were audiotaped and transcribed verbatim the same day or the next day.

4.3.2.2 Data collection

An interview guide was developed informed by literature about quality/safety in healthcare, as well as patient experiences, and through several discussions among the researchers (Appendix 2). The guide included questions such as: ‘Can you tell me a
little about your stay at…?’, ‘How did you feel the staff treated you if you asked them something?’ and ‘Can you describe a specific episode where you had this experience?’ Follow-up questions like ‘Can you tell me a little bit more about that?’ or ‘How did that make you feel?’ were based on the participants’ initial statements. The guide was used in a flexible manner so that various subjects could be explored depending on the participant’s story. In line with a phenomenological perspective, the participants were asked to describe concrete experiences and not only give an abstract description of how things happened.

The PhD candidate performed all of the individual interviews, which lasted from 25 to 90 minutes, with an average of 52 minutes.

The participants were asked where they wanted to be interviewed, and all but one of the participants was interviewed in their own home. The last interview was conducted in an office at the hospital.

4.3.3 Analysis qualitative studies

Thematic analysis was used to identify, analyse, and report patterns (themes) within the data (153), but also to interpret various aspects of the research topic (161).

In contrast to other qualitative methods, thematic analysis is not attached to any specific pre-existing theoretical framework. According to Braun and Clarke (153), thematic analysis should be seen as a foundational method for qualitative analysis. Although it has been characterized as a tool or a process to use across different methods, and not as a method in its own right (161, 162), Braun and Clarke claim that thematic analysis offers an accessible and theoretically flexible approach for analysing qualitative data, and therefore should be considered as a method. Ideally, according to Braun and Clarke, the analytic process involves a progression from description of patterns in the data, and a summarization of these patterns, to interpretation of what these patterns ‘mean’. In this process, data are seen in relation to, e.g., previous literature, and the researcher tries to identify the broader meanings and implications of any patterns (153, 163).

In an inductive approach, the themes identified are strongly linked to the data themselves (163). Some might argue that because theory was used to develop the interview guide, this study was deductive. However, during analysis, the entire dataset
was coded line by line, not just what seemed relevant to the research questions; hence an inductive approach was used.

According to Braun and Clarke (153), the analysis process starts when the researcher begins to notice and look for patterns and meanings in the data. It is a recursive, not a linear process, constantly moving back and forth throughout the phases (153). The analytic process in the qualitative studies included four steps, inspired by the phases suggested by Braun and Clarke.

4.3.3.1 Step 1 – Familiarization with the data

After each interview, initial ideas and thoughts were written down immediately in reflexivity notes. The same day or the next, interviews were transcribed verbatim. Some researchers argue that the process of transcription should be seen as a key phase of data analysis, and as an interpretative act (164-166). After transcribing the data, the PhD candidate listened to the audiotape again to ensure that everything had been captured, also writing down a description of, e.g., atmosphere and shifts in power dynamics.

Various conventions exist for transforming audiotapes into written text (165, 167). The PhD candidate focused on transcribing all the audiotaped material being very aware of punctuation, which can alter the meaning of the data (153). Rigorous and thorough orthographic transcripts, as well as a verbatim account of all verbal and nonverbal (e.g. coughing, laughing) utterances, were created.

During the reading, rereading and transcription process, initial ideas and thoughts of potential themes present in the data were written down, such as ‘The patients think this is a hospital!’, ‘It is very convenient for the patients to have this service nearby home’, ‘The patients appreciate staying at the MAW’, ‘Enough time’, ‘Differences in care provided by personnel between the MAW and the hospital’.

The interviews with the GPs were a ‘bumpy ride’; initially, thoughts and ideas about patterns changed almost from interview to interview. For example, the researcher’s first impression was that experienced GPs found it easier than unexperienced GPs to submit patients to a MAW. But, later on, it seemed that more experience made GPs even more anxious about what treatment and observation the
MAW could offer. Examples of themes that emerged early in the interview process with GPs include ‘Sceptical of MAWs’, ‘Is it possible to be certain of the diagnosis?’ and ‘My patient’.

4.3.3.2 Step 2 – The coding process

Data-driven coding was performed with a focus on letting the data determine the themes rather than approaching it with specific questions in mind. The coding was a systematic process, and equal attention was given to each data item. A table with three columns was made in a Word document, with the transcripted text in the first column. Potential patterns were highlighted with yellow in the text, including a little of the surrounding text so that the context did not get lost. Codes were then presented in column two, and collated codes or initial themes in column three.

The main supervisor and the PhD candidate coded the transcripts inductively, manually, line by line (in Norwegian) and individually to minimize subjectivity. Codes and initial themes were then compared and discussed until agreement was reached, and then presented in the research group. During this process the codes were also matched with data extracts that demonstrated the code. Combined, the analyses resulted in almost a hundred initial codes.

4.3.3.3 Step 3 – Searching for themes

After the second phase, the codes from both patient and GP interviews were sorted into potential themes, and all the coded extracts were collated within the identified themes. In this process two computers, as well as big pieces of paper, were used to organize the text into ‘thematic maps’. The PhD candidate also used a set of codes that did not seem to belong anywhere, creating a theme called ‘Not related’. In this phase, the researchers searched for a relationship between codes and themes, as well as between different levels of themes (main themes-subthemes), checking whether the themes related to the entire dataset.

A myth about qualitative research is that real qualitative researchers do not count (168). According to Sandelowski (168), however, counting is important in the
analysis process, leading to the recognition of patterns in data and deviations from those patterns. In the qualitative analytic process we therefore used counting to identify the proportion of participants that had experiences that could be collated. While some reviewers wanted this information, it was regarded negatively by reviewers in both Paper I and II. For example, one reviewer stated: ‘there are many judging comments based on the number of doctors who said so or so. This disturbs the message of what is a quantitative-based message (which is not relevant in a study like this)’.

4.3.3.4 Step 4 – Reviewing and naming themes

The last phase included reviewing, defining and naming final, overarching themes and interpreting the overall story told by the data. The researchers read through the coded data extracts to consider whether they formed a coherent pattern. After discarding themes that were identified within an already existing theme (for instance the themes ‘like a home’, ‘just like a hotel’ and ‘a local service’ were collated into the theme ‘location and physical environment’), the researchers could finally evaluate whether the thematic map related to the entire dataset. For each individual theme, a detailed analysis was written.

The analysis went beyond the surface of the data, questioning what the themes meant, theme implications, and what conditions had likely given rise to a given theme (for example negative patient experiences from in-hospital services or negative GP experiences with making the wrong diagnosis). The final written analysis of the patient interviews consisted of 19 written pages, while the analysis of the GP interviews consisted of 37 pages (Word document, A4).

Braun and Clarke (153) describe two different phases in what we included as our last step: phase 4, ‘reviewing themes’, and phase 5, ‘defining and naming themes’. Because we found these two phases difficult to separate, we collated them into a single step. Braun and Clarke also describe a sixth phase, namely, ‘producing the report’, which was also completed and presented in the papers.
4.4 The quantitative study (Paper IV)

4.4.1 Procedure

Meetings were conducted at each of the participating wards to inform the personnel about the aim and procedures of the study prior to data collection. This led to different starting dates. Information was displayed on wall posters and distributed as laminated written information, as well as via email, to ensure that everyone received the same information.

Questionnaires were manually coded with numbers, and a list of numbers corresponding with the coded questionnaires was created so that the personnel could fill in information (11-digit personal identification number, name and address) on patients who received a questionnaire. The personnel were also instructed to provide patients written and oral information about the purpose of the study before patients took questionnaires to answer at home. Patients were instructed to return the completed questionnaires using a stamped, pre-addressed envelope.

The data collection period was set to one year. During this period, the PhD candidate visited each of the seven wards at least once every fortnight to collect the questionnaire lists and deliver new questionnaires, to be available for questions and to remind the personnel to deliver the questionnaires. In addition, several reminders were sent by mail, together with updates on study progression and preliminary descriptive results, throughout the data collection period.

4.4.2 Participants and study sample

Participants were recruited from the five MAWs in Østfold County. We used a consecutive sampling method; the intention was to invite all patients discharged in the period June 2014 – June 2015 so that no decisions as to whether the patients were able to participate or not would be taken by anyone other than the researchers. Despite these precautions, it turned out to be difficult to include all patients: The number of patients that received a questionnaire varied from 36.9% to 68.9% of admitted patients. Visits every fortnight and regular reminders by mail did not seem to have any impact on this number.
Table 4 gives an overview of number of admittances, invited participants, and respondents at each of the five MAWs.

<table>
<thead>
<tr>
<th>MAW</th>
<th>Admissions</th>
<th>Invited participants</th>
<th>Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAW I</td>
<td>270</td>
<td>171</td>
<td>52</td>
</tr>
<tr>
<td>MAW II</td>
<td>637</td>
<td>226</td>
<td>108</td>
</tr>
<tr>
<td>MAW III</td>
<td>578</td>
<td>384</td>
<td>141</td>
</tr>
<tr>
<td>MAW IV</td>
<td>440</td>
<td>286</td>
<td>122</td>
</tr>
<tr>
<td>MAW V</td>
<td>257</td>
<td>168</td>
<td>56</td>
</tr>
<tr>
<td>Summated MAWs</td>
<td>2182</td>
<td>1235</td>
<td>479</td>
</tr>
</tbody>
</table>

Abbreviations and table legends: MAW=municipality acute ward; Admissions=number of admitted patients in the one year period; Invited participants=number of patients receiving a questionnaire in the one year period; Respondents=number of respondents in the one year period.

We aimed to include all patients fulfilling the inclusion criteria who had been discharged during the one-year data collection period. Inclusion criteria were

1) Patients age 18 years and older
2) Patients able to read and write Norwegian
3) Patients without cognitive impairment

The final sample consisted of 479 patients discharged from the five MAWs, in addition to 350 patients discharged from the two hospital wards.

4.4.3 Non-responders

If completed questionnaires were not received within approximately three weeks after discharge, non-responders received a reminder call. The age and gender of non-responders and responders was compared using the documented personal identification number (11 digits). Because the data were not normally distributed, we
chose to use the non-parametric Mann Whitney U test. Table 6 gives an overview the comparison of responders’ and non-responders’ gender and age.

<table>
<thead>
<tr>
<th>Table 6. Responders (n=479) and non-responders (n=756) in the MAWs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Mean age (SD)</td>
</tr>
<tr>
<td>Median age</td>
</tr>
<tr>
<td>Male</td>
</tr>
</tbody>
</table>

Abbreviations and table legend: MAWs=municipality acute wards; SD=standard deviation; Mean/median age=in years.

### 4.4.4 Data collection – questionnaires

The final choice of questionnaires was a result of several discussions between the researchers and collaborating physicians in the community (through the ADMS/Klinisk utvalg KAD) over a one-year period. Several translated, validated instruments existed, but these were considered too extensive. Short forms consisting of only six to eight questions (such as the NORPEQ (169)) were considered to be too short and not to cover all desired areas. There was also discussions about whether patients were able to answer a questionnaire at all. Finally, all of the participants in the project planning process agreed on a questionnaire: the Picker Patient Experience Questionnaire (PPE-15).

The final questionnaire (Appendix 3) consisted of two different instruments:

1) The Picker Patient Experience Questionnaire-15 item version (PPE-15) (170, 171) was developed to elicit feedback from patients to highlight aspects of care that needed improvement, and to monitor performance and care. It consists of 15 questions distributed across seven domains: respect, coordination, information/communication/education, physical comfort, emotional support, involvement of relatives, and transitions and continuity. The questions have two to four response options (‘yes’/ ‘no’, or ‘yes’/‘no’/‘I did not need to’, or ‘yes, to some extent’). The possible responses are computed into ‘no problems’ and ‘problems’ for each scoring. A problem is defined as an aspect of healthcare that could be improved, from a
patient perspective. The most positive answers are coded as ‘non-problems’ (score=0), as are neutral answers such as ‘I did not need to’. The remaining responses are coded as ‘problems’ (score=1) (172). This gives a minimum score of 0 (no problems) and a maximum score of 15 (high level of problems). The overall problem score for each respondent can then be calculated as the mean of their problem scores for all questions x 100%, or reported as the proportion number of problems divided by the number of answers. In this model, non-response is counted as a non-problem. The PPE-15 has previously been found valid and reliable (171).

2) The Euroqol 5-dimension-3-level version (EQ-5D-3L) (173) is a generic measure of health status that provides a simple descriptive profile and a single index value that can be used in the clinical and economic evaluation of healthcare, and in population health surveys (174, 175). The EQ-5D 3-level version (EQ-5D-3L) consists of the EQ-5D descriptive system that measures health-related quality of life on five dimensions: mobility, self-care, usual activities, pain/discomfort, anxiety/depression, and the EQ visual analogue scale (EQ VAS). Responses are scored according to three levels: 0 (no problem), 1 (some problems) to 2 (severe problems). The EQ-5D-3L score can be used as a descriptive system or as an overall EQ-5D-3L index score by assigning weights to each level of each dimension according to the Europe VAS value set (176).

3) Sociodemographic and clinical data (gender, age, civil status, housing status, employment status) were included as a part of the questionnaires and self-reported by patients. Admission diagnosis (according to the symptom-based code list ICPC-2), medication/treatment received, length of stay and level of follow-up after discharge (hospital, nursing home, home-care nursing or none) were gathered from the patients’ medical records.

4.4.4.1 Comorbidity

The Charlestown comorbidity index (CCI) (177), a method of predicting mortality by classifying or weighting comorbid conditions was used to control for comorbidity as a potential confounding variable to patients’ experiences. This method has been
widely utilized by health researchers to measure burden of disease and case mix. The CCI was originally developed based on data from hospitalized patients, and aims to predict one-year mortality. Nineteen predefined diseases, expressed with the values 1, 2, 3 or 6, are included in the CCI based on their association with one-year mortality. In addition, one weight is added for each decade after 50 years of age. Summing the weights gives the CCI score (CCIS) for each patient.

Quan et al. (178) developed coding algorithms for constructing the CCI based on the codes of the Tenth Revision of the International Classification of Diseases (ICD-10). Information about patients’ comorbid conditions as ICD-10 codes was collected from the national patient register (NPR), a register based on hospital administrative databases from which data are readily available. Data were obtained based on the patients birth number, one year ahead of the admission, as suggested (179).

4.4.4.2 PPE-15 translation process

Producing high-quality translation is labour-intensive and time-consuming. A rigorous and multistep procedure is recommended to ensure quality of the translated document (180). When a document is translated into another language, it is important that the meaning of each item remains the same after translation (150). Since the PPE-15 had not been translated into Norwegian, a forwards and backwards translation method was used as proposed by Brislin (181). First, the translation from English to Norwegian was done by two of the researchers who speak and write both English and Norwegian and who know the field of patient experiences well. Then, the Norwegian version was translated back to English by a native English-speaking researcher and compared to the original version to ensure that the contents of the original questionnaire had been preserved.

4.4.5 Statistical analysis

The statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS) Version 21 (182).
Summative statistics were used to present characteristics of the sample. Frequencies of respondents’ reporting of problems on each of the PPE-15 items were calculated. Since data were not normally distributed, continuous variables were displayed by their median, mean and standard deviation. We chose to present both median and mean to highlight the skewness in the data.

A Mann-Whitney U test was used to evaluate differences between responders’ and non-responders’ gender and age.

A binomial linear mixed model is a flexible generalization of ordinary linear regression that allows for response variables that have error distribution models other than a normal distribution. In addition, this model includes both fixed (independent) effects as well as random effects (thus the ‘mixed model’ designation). The proportion of PPE-15 scored as ‘problem’ (dependent variable) was estimated using a binomial linear mixed model (183) using socio-demographic variables, length of stay, Charlson comorbidity index score (CCIS) and EQ-5D index score as covariates (independent variables). Insignificant variables were removed from the model one at a time until only significant effects remained.

The ratio of the between-cluster variance to the total variance is called the intraclass correlation (ICC) (184). The ICC gives information about the proportion of the total variance in ‘X’ (patient experience) that is accounted for by the clustering. It can also be interpreted as the correlation among observations within the same cluster. Intraclass correlation (ICC) was calculated to explore the proportion of random variation. Some variation in patients’ scores can be attributed to individual experiences as well as to aspects of the different locations (e.g., staffing situation and what kind of services they offer) (185). Care wards and patients (identity) were consequently included as random effects to account for the inhomogeneity between patients and inhomogeneity between wards.

All tests were two-sided with a 95% confidence interval (CI) and a significance level of 0.05.
4.5 Ethical considerations

The studies followed the Declaration of Helsinki principles for medical research (186), and written, informed consent was obtained from both the patients and the GPs. An application was submitted to the Regional Ethical Committee for Medical and Health Research (ref no. 2013/1276/REK sør-øst D), but the project was not found to fall under the committee’s mandate. An application was submitted to and accepted by the Norwegian Social Science Data Services (ref. no 38585).

4.5.1 The qualitative studies

The interviews were audiotaped, and transcribed verbatim. Both the tapes and the transcripts were kept safely locked away at the hospital.

At the beginning of each interview, the participants were notified about the researchers’ commitment to confidentiality and that they had the opportunity to withdraw from the study at any time, without any negative consequences for themselves.

When interviewing, it is important to be aware of the power relations in research interviews (187). It has been claimed that the qualitative research interview entails a hierarchical relationship with an asymmetrical power distribution between interviewer and interviewee (187, 188). The PhD candidate utilized reflexivity notes after each interview to be aware of what happened in each situation.

4.5.2 The quantitative study

The patients received both oral and written information about the study purpose. The written information included the study purpose and aims, methods and the name and phone number of the responsible researcher and contact person. The patients were informed that participation was voluntary and that they could withdraw from the study at any point, without any negative consequences. The patients were informed that data would be treated confidentially, and that their personal information could only be collected using a code, which only authorized personnel could access.
The code lists were kept safely locked, away from the completed questionnaires.
5.0 RESULTS

5.1 Summaries of papers

*Paper I: General practitioners’ perspectives on referring patients to decentralized acute healthcare*

Aim: The first paper aimed to describe GPs’ perspectives on factors relevant for their decision making when referring patients to MAWs.

Methods: A qualitative approach was used: semi-structured interviews were conducted with 23 GPs from the five different MAW catchment areas. The data were analysed using thematic analysis.

Results: Five themes that related to GPs referral decision making were identified: 1) admission criteria, 2) diagnostic challenges in general practice, 3) an additional service to consider, 4) a new service, and 5) GPs exposed to pressure. Admission criteria were described initially in each interview as easy to relate to, but as the interviews proceeded the GPs drew a more complex picture of their experiences with clinical practice. The results showed that GPs experienced challenges when deciding which patients fulfilled the admission criteria and were suitable for treatment at a MAW. GPs found it difficult to assess whether patients could be regarded as medically clarified, and whether the MAW services were sufficient and safe. The latter concern was related to GPs’ uncertainty when diagnosing a patient during a 15-minute office consultation with limited diagnostic equipment. The GPs reported that they admitted patients to the MAW who did not always fill the criteria, and also that they referred patients who otherwise would not have been hospitalized. Hence, the MAWs represented an additional healthcare service option in cases where GPs felt that patients could not return to their home, yet did not need hospitalization. GPs also reported that they were not that familiar with what the MAW could offer in terms of treatment and care. Furthermore, GPs felt under pressure from several other stakeholders when deciding where to refer their
patients.

Conclusions: The findings give insight into how GPs experience decentralized acute healthcare services, as well as into issues that influence and challenge their referral decisions. In addition, findings indicate that the MAWs are used as an additional service, and not merely as intended in the CR: as an alternative to hospitalization.
Aim: The second paper aimed to describe how patients normally admitted to hospitals perceive the quality and safety of treatment in MAWs.

Methods: The data material was derived from qualitative interviews with 27 patients discharged from five MAWs. Thematic analysis was used to analyse the data.

Results: The results showed that three issues in particular had an impact on patients’ experience of quality and safety when treated in MAWs: 1) treatment and competence, 2) location and physical environment and 3) adequate time for care. The participants reported that the content of the health services was equivalent to what they had experienced during previous hospitalizations in terms of treatment and formal competence, as well as clinical follow-up. Even if a vast proportion of participants referred to limited diagnostic possibilities, this did not impact the patients’ feeling of security while staying at a MAW. Participants considered the geographical location of the MAW, which made it easy for relatives to come visit, to be an important factor in their satisfaction. The long corridors and patient rooms were highlighted as equal to the hospital, while the ‘comfortable and calm environment’ as well as good sanitary, nutritional and hygienic conditions positively distinguished the MAW from the hospital. Participants experienced adequate time as related to effectiveness and waiting times, as well as healthcare personnel having enough time to engage with their patients. Overall, participants had experienced that time seemed to be a limited resource in hospitals, while their impressions from the MAWs were quite opposite. Only three of the participants, all admitted with acute back pain, voiced scepticism about the quality of the health services offered at the MAW.

Conclusion: Participants felt safe when treated at MAWs, even though they realized that the diagnostic services were not of the same quality as those found in hospitals. Geographical proximity, treatment facilities and time for care positively
distinguished MAWs from hospitals, while the lack of diagnostic resources was stressed as a limitation.
Aim: This paper aimed to describe the relation between patients’ experiences with MAWs and the concept of patient-centredness.

Methods: The paper was based on findings from qualitative interviews with 27 patients discharged from five MAWs (thematic analysis).

Results: The results showed that two aspects of patient experience could be related to patient-centred care models: a) communication, and b) being treated as a person. When reflecting about their stay at the MAW in retrospect, a vast majority of patients had a sense of having been treated as important or unique. Participants talked about communication as information, orientation, explanation, a dialogue between equals and the possibility to ask questions, all things they had positive experiences with at the MAW but negative experiences with from hospital. Communication was also a contributor in the participants’ experience of being treated as a person. Participants referred to the MAW as an example of a practice that demonstrated respect for the patient, not only focusing on his or her disease or particular problem, as several of them had experienced in hospital, but on the patient as a person, a complex human being. This included being considerate about patients’ beliefs and values, as well as providing for not only physical but also emotional needs. While the majority of patients recognized the fact that they were taken care of at hospital also, the way in which they were cared for at the MAW was described in a somewhat different manner. While the notion of ‘being taken care of’ in hospital referred to the healthcare personnel doing their professional duty as a nurse or physician, ‘taken care of’ in the setting of the MAWs referred to a more informal set of actions. Participants referred to these actions using the following language: ‘someone looking after you’ and ‘someone coming by’, ‘watched after me’, ‘taken care of’ and ‘attentive’, ‘comforting and caring’, ‘look after’, and ‘stopped by’.
Conclusion: Findings indicate that patients experienced the MAWs as offering patient-centred healthcare services.
Paper IV: Evaluation of patient experiences in a cross-sectional sample of 479 patients admitted to decentralized acute care units

Aim: The last paper aimed to describe patients’ experiences with MAWs and the potential influence of socio-demographic variables, length of stay, comorbidity and self-rated health on these experiences.

Methods: Patients were recruited from five MAWs during the period from June 2014 to June 2015. Patient experience was assessed using the Picker Patient Experience Questionnaire (PPE-15). In addition to socio-demographic data and length of stay, self-rated health was assessed using the EuroQOL 5-dimension, 3-level version (EQ-5D-3L) questionnaire, and comorbidity was estimated using the Charlson comorbidity index (CCI).

Results: A total of 479 patients were included; their median age was 78.0 years and 41.8% were men. The results showed that the largest proportion of problems was observed in the ‘continuity and transition’ dimension of the PPE-15, in particular in the item related to information about danger signals to observe at home, while the smallest proportion of problems was related to being treated with respect and dignity, and to whether doctors talked in front of them as if they were not there. Furthermore, between 38.0 and 47.2% of patients reported problems related to involvement in treatment and care. While 17.3–32.1% of patients reported problems related to whether explanations about the purpose of medicines were understandable, 38.5-55.4% reported problems related to information about medication side effects. These variations were irrespective of treatment location. Overall, there were few respondents who did not report any problems at all (n=10). The Charlson comorbidity score was the only variable that negatively influenced patient experience.

Conclusion: The findings add to existing knowledge about what patients find important when receiving acute treatment and care. In addition, the findings
contribute new insight into areas that need attention during the process of planning, developing and refining new healthcare services in general, and MAWs in particular.
6.0 DISCUSSION

The focus of primary healthcare is twofold: to deliver cost-effective, innovative initiatives for community-based care (189-191), and to prevent disability (192). International studies indicate that about 20% of patients admitted to hospital could have been treated at a lower level (37, 193, 194). The MAWs were established as decentralized acute healthcare units to reduce the number of hospitalizations, decrease healthcare costs, improve efficiency and increase focus on primary care rather than specialist services. However, the initiation of these units was based on political initiatives, and research on these units is currently limited.

In this thesis, several decentralized initiatives have been presented, old as well as new and innovative, acute as well as non-acute. These initiatives have all been introduced to promote quicker recovery, prevent unnecessary hospital admissions and support timely hospital discharge (76, 105, 106). The services have been organized in dedicated wards/units, e.g., Critical Access Hospitals (CAH) (84, 195), or as services that focus on enhanced care in the patient’s home, such as the ‘hospital at home’ (HAH) (92-94). These interventions have, however, mostly targeted elderly patients (196), while the MAWs aim at treating patients 18 years and older. In Norway, ‘sykestuene’ (GPHs/CHs) represent a service in between primary and specialist healthcare that offers acute treatment, observation, diagnostics and rehabilitation, as well as care and palliation (197). The professional responsibility in GPHs lies with the general practitioner in the area, thus differing from the MAWs in Østfold. The GPHs represent services that meet the need for treatment and rehabilitation of somatic patients the MAWs are not meant to cover. In summary, the described organizations have both similarities (e.g., community-based, generalist focus, small units) and differences (e.g., non-acute services, focus on elderly persons or a new definition of already existing beds). What seems to be similar is that most patients’ regard these units as providing safe and quality services, and that most patients find the environment to be preferable to that of larger hospitals.

Studies on the alignment in goals between patients, their caregivers and family physicians are sparse and seldom include the perspective of the patient (126). A study from the Netherlands concluded that a mutual understanding of the expectations, needs and goals of all stakeholders involved in healthcare services,
both professionals and patients, is needed to ensure quality in healthcare. The study also emphasized the lack of research on this topic (189). In this thesis, the three studies have been presented to highlight both patients’ and GPs’ perspectives on decentralized acute healthcare services as offered in MAWs.

6.1 Discussion of main results

6.1.1 GPs’ perspectives on and experiences with MAWs

This study is one of the first to explore GPs’ experiences with decentralized acute healthcare services in MAWs after the implementation of the CR. Findings are in-line with Kairys’(113) findings from Oslo that GPs experience the MAWs to be new services, with which they are not familiar. GPs in Kairys’ study reported the admissions criteria to be narrow, meaning that patients had to be cleared of many conditions before they could go to the MAW. In contrast GPs in our study reported that the admission criteria had been slightly modified, and that the most important criterion was that the GP deemed the patients’ condition to be stable. GPs in Kairys’ study reported that if they felt secure about the patients’ condition, they sent them back home, while GPs in our study seemed to use the MAWs more frequently for patients that did not belong in hospital (113).

In 2014, Deloitte performed a study commissioned by the Norwegian Ministry of Health and Social Care (59). They found that the number of patients referred to MAWs has increased since the establishment of such wards, and that it currently aligns with capacity. Deloitte also claimed that it takes time for referring physicians to become familiar with the services provided by MAWs. Moreover, healthcare leaders reported that referring physicians forget that the MAWs exist and that they are not familiar with the level of services the MAWs can offer, which is in line with our findings. Furthermore, admission routines were experienced as cumbersome. Yet, although these findings were based on telephone interviews with 30 different stakeholders, none of them were GPs. Our findings support several of the findings in different reports that include GP-related issues but do not include GPs as interview participants (59, 60, 113). Examples of similarities are that geographical proximity to
the patients’ home has been seen as an advantage, as well as a lack of trust in the services’ quality and safety and the experience of requiring extra time to refer to the MAW instead of the hospital.

Variation in GP referral rates exist, and a review of the literature shows that the patient, GP or practice characteristics answer for only half of the observed variation. GPs’ willingness to take risks, their tolerance of uncertainty and their perception of how often serious disease occurs also play a big part (198). GPs’ lack of trust in the MAWs has been emphasized and described as a result of the lack of a doctor being present 24 hours at the MAW, and a lack of knowledge about what kind of services the MAWs can offer (59, 113). These findings are, however, based on interviews with healthcare leaders, and not with GPs themselves.

Furthermore, Lappegard and Hjortdahl (37) performed a study on patterns of referrals to three different somatic emergency service levels in Hallingdal, one of which was the Hallingdal Sjukestugu (HSS). They found that acute admissions at a lower level than the general hospital ranged from 9 to 29%. Healthcare leaders in the municipalities (focus group interviews) noted that the differences in number of admissions depended largely on the demographic and socio-economic characteristics of the inhabitants. The patients’ clinical condition was a decisive factor in determining the level to which the patient was referred, as also described in our study. The authors suggest that younger doctors with less experience had a tendency to refer patients to the hospital (37). Such a correlation could not be detected in the current study.

The findings in this thesis indicate that GPs find it difficult to assess whether patients can be admitted to the MAW or if they should be hospitalized instead.

The GPs’ fear of making mistakes, making the wrong diagnosis or choosing the wrong treatment is not without reason: Errors related to diagnosis have been shown to account for anywhere between 26% to 78% of all errors identified in general practice (199). Additionally, 72.9% of errors reported by GPs were errors related to processing the patient within the healthcare system, for example choosing the wrong treatment, or failure in communication (200).

In most countries, GPs are in charge of referring patients to different healthcare services (13, 196). In a study from England, GPs perceived that serious
illness could not be excluded by anyone other than a hospital doctor, even when it
was recognized that the chance of such illness was very small. In addition, some
participants perceived clinical assessment in the community as a delay to accessing
specialist care (201). Mostly, when it comes to MAWs, the discussions about
inappropriate admissions target the patients who should have been in hospital (38).
This was confirmed by the GPs in this study, who described doubts as to whether
their patients’ conditions were clarified and whether they were stable enough to be
treated at the MAW.

GPs reported that there were great differences between the different MAWs
in terms of diagnostic equipment and what kind of services they could offer. The
fragmentation and diverse nomenclature of urgent care services, for example, across
England, have been shown to cause confusion amongst patients and healthcare
professionals. This may lead to delays in patient treatment, increased clinical risk and
poor patient experience, as well as inefficient use of specialist care and resources
(202). In 2016, the ADMS and ‘Klinisk utvalg KAD’ started to develop a ‘minimum
requirements standard including all five MAWs in the county’, but it seems to be
difficult to reach an agreement. The successful implementation of MAWs is
dependent on a positive attitude among GPs, as key stakeholders, and on their
engagement and professional commitment to be part of the process of change in the
healthcare system (203-205). If GPs do not use the MAWs, decentralization will fail.
However, if they not only use them, but also continuously give feedback to the wards
as part of a quality improvement initiative, the MAWs have a chance at succeeding.

6.1.2 Patients’ experiences with MAWs

Studies on patient experiences with MAWs are lacking; hence, findings in this thesis
provide new knowledge. MAWs and other decentralized units are not directly
comparable, e.g., size, services offered and target patient population differ, as does
the extent to which the services are acute or not and whether they are alternatives to
hospitalizations or services before and after a hospitalization. Nevertheless, findings
in this thesis support earlier research on such units. For example, patients prefer
being treated in a less busy and harried environment in small units, in geographical
proximity to their homes, rather than in stressful and hectic hospitals (78, 105-107, 206). Furthermore, patient experiences have been found to be more positive in small and rural hospitals than in larger and more urban hospitals (38, 74, 108, 109). Moreover, studies have shown that ideal features of the hospital work environment, such as better staffing ratios of patients to nurses, and a decreased mental workload for providers are associated with improved patient outcomes and satisfaction, and even with increased quality (207-212). The MAWs did not always have as many patients as they had capacity for, and the wards consisted of only four to eleven beds, suggesting that the MAWs had better staffing ratios of patients to nurses. Most of the patients in MAWs had single rooms, and emphasized this an advantage in comparisons to earlier hospital experiences. Recently, the hospital in Østfold, which opened in 1956, and where single rooms were an exception, closed down. At the same time, a new hypermodern hospital with only single rooms opened. Because patients reflected on their MAW experiences in light of earlier experiences from hospitals, it is possible that their assessment might have been different had they experienced hospitalizations in the new rather than the old hospital. However, the influence of these factors remains hypothetical. In contrast, three of the patients also expressed scepticism about the quality of the services offered at the MAWs based on the lack of diagnostic equipment and possibilities for more thorough investigations, which could align with studies that emphasize that patients cannot adequately assess the quality of medical treatment (137, 143).

For persons with complex healthcare and social care needs, the lack of round-the-clock access to services they need can lead to poor care experiences and unnecessary hospitalizations. To be able to meet the needs of patients who have a condition that requires immediate action (but is not serious enough to require specialist care), access to round-the-clock integrated community-based care has been emphasized as important (213). MAWs are community-based care services that aim to offer such services, and this could partly explain the positive patient experiences with MAWs.

Furthermore, the importance of patient-centred care has been emphasized in healthcare- and social-care-related policies internationally. A study of 10 acute hospital settings in Ireland examined the relationship between patients’ perceptions of person-centredness and their experiences of care. The researchers found a moderate positive and significant relationship between patients’ perceptions of a
person-centred climate and patient experiences. Patients who perceived care as being more person-centred also reported a more positive patient experience. Hence, the study demonstrated a clear linkage between patients’ experiences of care and the key indicators of person-centred care (214), as suggested in our study.

Findings in the quantitative study showed that the largest proportion of problems was observed in the continuity and transition domain of the PPE-15 (from 69.4 to 76.6% reported problems in each ward). No other studies that have investigated patients’ experiences with MAWs have been identified in this thesis. Findings from hospitals, however, indicate that the pressure on available hospital beds and community resources affect the discharge process (215). Whether patients are ready for discharge depends not only on readiness related to physical function, but also on emotional, cognitive and psychosocial readiness (216, 217). In addition, any assessment of readiness for discharge has to take into account the perspectives of relatives as potential caregivers at home (215). Patients often feel unprepared for discharge, and post-discharge care does not take into account individual patient needs and preferences (215). Patients discharged from hospitals have reported not to receive instructions for follow-up or clear medication directions (218, 219). This is supported by findings in the current study. Prior studies have shown that poor communication, incomplete transfer of information, and inadequate education of patients may lead to unplanned readmissions and adverse events (220, 221), which highlights the importance of focusing on transitions and discharge processes when trying to decrease the pressure on hospitals. Hence, even if the MAWs were experienced as providing quality, safe and patient-centred services in the qualitative study, findings in the quantitative study point to specific issues that need emphasis, for example in relation to the discharge process and involvement of patients in decisions.

Patient reports are influenced by patients’ own needs and recollections. Without the evaluative aspect of the measurement, there is only the patients’ recollections of what happened without knowing what criteria they used to judge the standard. For example, one patient’s ‘always’ might be another patient’s ‘sometimes’. Other aspects of care could happen ‘sometimes’ and still meet patients’ needs (222). In addition, recall bias is always present in surveys: patients’ reporting will be influenced by what they remember and will not necessarily reflect what really happened (223). Moreover, most patients do not have medical
knowledge or education. Hence, patient evaluations cannot be used to assess aspects such as the technical quality of care (137).

6.1.3 Factors that influence patient experience

Studies on primary healthcare services reveal inconsistencies regarding factors that influence patient experience; for example, one study emphasized the importance of health status and socio-economic status, but not age and gender (224), while another pointed to the importance of age and ethnicity (225). Patients’ self-rated health and age have also been associated with patient-reported experiences (226, 227), as well as patient satisfaction (228). Surprisingly, in the thesis study, self-rated health, as assessed with the EQ-5D-3L, gender and age did not have any impact on patient experiences. Neither did the patients’ housing status, civil status, employment status, educational background or length of stay.

Three terms are commonly used interchangeably to identify vulnerable older adults: comorbidity, or multiple chronic conditions, frailty, and disability (229). Vulnerable patients have reported significantly fewer positive care experiences than non-vulnerable patients (mean PPE-15 score 0.75 vs 0.85; p < 0.0001) (230). Studies have shown that patients with CCI scores above 5 have higher 3-month mortality (odds ratio (OR) = 3.6, 95% confidence interval (CI) = 2.1-6.4), 1-year (OR = 7.1, 95% CI = 4.2-11.9), and 5-year (OR = 52.4, 95% CI = 13.3-206.4) than those with a comorbidity of 0 (adjusted for gender and age). Participants with CCI scores between 1 and 4 also had greater mortality risk at 3 months and 1 and 5 years (231). In this PhD thesis, increased comorbidity was associated with an increased amount of problems reported in the PPE-15. Of the included patients with CCI scores above 5 (mean CCIS varied from 0.92 to1.38), and older men were under-represented.

6.1.4 Patients’ and GPs’ experiences with MAWs

Findings in this thesis show that GPs’ and patients’ perspectives on MAWs differ. When establishing new healthcare initiatives, the aims and goals of patients may
differ from those of healthcare professionals, leaders and politicians. Failure to share goals may lead to physicians focusing on aspects of care and treatment that are not perceived as important by the patients, and vice versa (232). For example, patients have expressed a preference for single rooms based on a feeling of comfort and control, while staff perceive that single rooms are worse for visibility, surveillance, teamwork and monitoring (233). Furthermore, for instance, Cox et al. (234) found that 39% of patients wanted their GP to share the decision about treatment with them, while 45% wanted the GP to be the main (28%) or the only (17%) decision maker – in contrast to GPs’ perceptions of their patients’ strong desire to be involved in decision making.

Perceptions of the severity of a patient’s condition may also differ; a study of patients who contacted a casualty ward in Oslo found that physicians defined the level of urgency lower than their patients did (235). In contrast, a study on patients’ and healthcare professionals’ attitudes towards type 2 diabetes found that healthcare professionals viewed type 2 diabetes as more serious than their patients did (236). Studies have shown that GPs and nurses are more medically oriented, while for most patients, mutual understanding and personalized communication are more important than their actual medical condition (189). This shows that patients’ and physicians’ perspectives differ regarding comfort, safety, shared decision-making and judgement of condition.

In terms of the findings in this thesis, it could be that patients focus on comfort rather than expertise (and that they do not have the knowledge to judge the level of medical competence), while GPs feel responsible for choosing the appropriate treatment and feel uncertain about both diagnosis and healthcare level. The lack of diagnostic equipment at the MAW was seen as a limitation by patients, but to them it did not imply insecurity. While GPs also viewed this as a clear limitation, they found it difficult to be confident that the MAWs offered safe and quality services, and expressed doubts as to whether the personnel (doctors) had sufficient and relevant competence.

Papp et al. (237) performed a study in seven European countries on patients’ and professionals’ perceptions of the quality of primary healthcare. Examples of similarities were that geographical access was important, which both GPs and patients in our study also emphasized. Moreover, in line with findings from the current study, patients expected their physicians to be empathic, friendly, attentive
and sympathetic, while professionals emphasized the importance of solving patients’ problems adequately and making patients understand their health status. All these factors require adequate time to be accomplished, and ‘time’ was highlighted as important by both patients and GPs (describing a lack of time) in this thesis. According to Papp et al. (237), patients’ and healthcare professionals’ diverging perspectives could be understood as complementary. Knowledge about both patients’ and GPs’ experiences with MAWs provides an important overview of factors that should be emphasized in quality improvement initiatives, as well as when developing new alternatives to general hospitals.

6.2 General methodological considerations

6.2.1 Methodological considerations study I (Paper I)

When interviewing the GPs, the PhD candidate felt almost like a patient, or a novice. It was quite difficult to include doctors in the study and the PhD candidate felt like she had to be grateful that they took the time to be interviewed. Time was also an issue during the interviews, since many of the appointments were during the GPs’ lunch break, or between patient consultations, implying that the interviews had to be conducted efficiently. The PhD candidate was a nurse, the participants were physicians, and most of them were men. Reflexivity made the PhD candidate conscious of factors affecting the interview situation, and helped to prepare for the next interview, namely, what to focus on, and what to avoid, and it was always present when interpreting the data.

Because of the GPs’ self-defined limited time resource and the lack of response to invitations, a consecutive sampling method was chosen, according to which all the GPs in the county were invited. Similar recruiting difficulties were experienced by a master’s student inviting all the GPs in Oslo (n=500) to his study: he was only able to include eight participants, after reminders (113). Choosing another sampling method, e.g., snowballing, might have been beneficial. Nevertheless, approximately the same number of participants from each of the MAW catchment areas, representing both genders and a variation in age and
experience, were included. Whether or not these findings are reflective of GPs experiences is a subject for further discussion.

The GPs were encouraged to describe concrete experiences from patient consultations, but it was very hard to get the GPs to give rich descriptions of their experiences. When interviewing the GPs, the use of the interview guide was therefore not as flexible as in the patient interviews, and in some cases the interview had a more structural approach.

This study only included GPs. Statistics from Østfold show that GPs refer approximately 42% of all patients admitted to the MAWs, while physicians in casualties refer approximately 53% (238). Results could have been different if physicians from other locations had been included. An invitation to participate was also sent to the five casualties in Østfold, but we received only one response. Hence, we chose to only include GPs to reflect the importance of including GPs in decisions and development of primary healthcare services. Most of the included GPs also worked in a casualty from time to time, and could describe experiences from this perspective.

In retrospect, it would have been appropriate to let the GPs read through the transcripts and the analysis to verify the content, however this was not done in the current study.

6.2.2 Methodological considerations study II (Papers II and III)

When entering the participants’ home, it felt easy to take on the role of a guest: most of them had made coffee, set the table with cups and plates and bought cakes. Some of them also had a smoke inside. The impression was that the participants felt relaxed and talked freely about their experiences.

Some of the patients lived by themselves and did not receive so many visitors during a week. In these circumstances, it was a challenge to retain focus on the purpose of the study and not let the visit turn into a social chat. Especially in the first interviews, the PhD candidate felt like a nurse, talking to a patient, but with some guidance from supervisors and use of reflexivity it was easier for her to put ‘the nurse’ aside during the process.
The sample came from a single geographical area (Østfold county, Norway). It is acknowledged that the relative importance of aspects of quality of care may be different in different places, but considerable benefits have been found when using work from different settings to develop measures of quality of care (239, 240). The current study included participants from both urban and rural areas of the county, representing both genders with a range in age from 50–90; this can be regarded as a strength.

It is possible that other themes could have been revealed if another sampling method had been chosen, or even if invitations to interviews had been based on the completed questionnaires, to include patients reporting several problems, as well as patients who did not experience any problems. The questionnaires were not reviewed prior to the interviews, and data from the questionnaire were not related to the specific interview setting.

In one of the MAWs, only one participant was interviewed, due to the consecutive data sampling, and this may have limited our findings. Saturation was reached, but, in retrospect, it might have been appropriate to include more participants from this MAW to ensure saturation.

6.2.3 Methodological considerations study III (Paper IV)

Originally, the aim was to compare patient experiences from MAWs to patient experiences from two hospital wards. Since there were significant socio-demographic differences between responders in MAWs and in hospital, a comparison of experiences from the five different MAWs only was chosen in Paper IV.

In early phases of the study process, the hospital statistician did not recommend a sample size calculation; he suggested that a sample size of 500 patients each from the MAWs and the hospital respectively would be appropriate. Due to the PhD candidate’s lack of research experience, this was not reconsidered. Yet, a calculation of sample size would probably not have increased the number of patients included, since we experienced challenges in inviting patients to participate. Furthermore, increasing the number of patients needed in the study would have
resulted in a need to extend the inclusion period. Due to the time limitation for the project, this was not considered.

The mean CCIS varied from .92 to 1.38 (SD 1.3–1.7). This could indicate that patients with higher comorbidity scores were not included. Lee et al. claimed that prevalence of comorbidities increased substantially with the inclusion of previous admissions occurring up to 3 years prior to the index admission (241). In retrospect, other CCI scores could have been received if the ICD-code-collecting period had been extended. Choosing a larger time interval (e.g., the three last years) could have led to more patients with more comorbidities. Nevertheless, the literature emphasizes that comorbidities should include conditions that are present upon admission (242).

Moreover, there were significant differences in gender and age between responders and non-responders. Hence, the sample might not be representative of the whole population, as both patients with high comorbidity scores and older men seem to be under-represented.

In addition, not all patients discharged from the seven wards were invited to participate. This could have represented a selection bias. There did not seem to be any patterns regarding who was invited and who was not, and the non-inclusion seemed to be random. The reasons seemed to be lack of time due to many tasks, and in the discharge process the personnel just forgot about the questionnaire. In one of the wards, an administrative employee took the responsibility for inviting patients, and in another ward one of the administrative nurses did the same. In their absence a decrease in the proportion of patients being included was observed. In retrospect, it would have been beneficial to engage a study nurse in each of the participating wards.

An original inclusion criterion was that the patients should not be cognitively impaired. However, the personnel defined ‘cognitive impairment’ differently. Hence, a decision was made that all patients should be invited to participate regardless of cognitive status. The patients needed to accept to participate, complete the questionnaire at home, sign the consent form, put these in the pre-stamped envelope, and post it. The ability to complete this procedure was interpreted as cognitive ability. In addition, ICD-10 codes were checked as to whether they included any diagnosis that indicated mental decline such as Alzheimer’s disease or other types of dementia.
According to advisors from the Picker Institute (personal correspondence), no table of normative values exists for the PPE-15. For example, there are no documents that set out how to calculate missing values. In some papers, non-response is counted as a non-problem. This is unusual, and might give rise to bias if there is more than a small proportion of missing data (170). In this situation, the Picker Institute suggested averaging only the non-missing items (personal correspondance), which was done in this thesis.

Only the participants who reported their health as unchanged from last completion of the questionnaire were included in the test-retest analysis as well as the correlation analysis to the NORPEQ, n=68 (n=154 completed a retest questionnaire). In retrospect, a larger number of patients could have been invited in order to evaluate test-retest of the PPE-15, yet a review of test-retest studies found that the median number of patients included was 60 (243).

Research on the effect of survey timing on patient evaluations of health services has produced contradictory results. Several studies have showed a worsening in patient evaluation over time (244). Regardless of reason, increasing time since discharge seems to result in poorer patient experience scores (245). In the current study, all of the patients received the questionnaire at time of discharge; the time of actual completion of the questionnaire was not registered. The interviews were performed approximately 3 weeks after discharge, in immediate relation to receipt of the completed questionnaire. Patients’ reports during interviews, which referred to earlier hospitalization, could have been influenced by recall bias and the increased time from discharge from hospital.

6.3 Validity and reliability

To validate is to question the credibility of the knowledge gained throughout the research process, and to determine whether the knowledge is ‘true’ and under which circumstances (150, 246). The data collection for all three studies was conducted during the same time frame: The questionnaire study started in May/June 2014, the first patient interview was performed on 16 June 2014 (last interview 4 December 2014) and the first GP interview on 30 May 2014 (last interview 17 February 2015). Some may emphasize that this was too large of a burden at the same time. Yet, the
PhD candidate felt that it was important that all of the data be collected at the same time so that the concept of MAWs was still relatively new to all of the respondents/participants. During the PhD period, the MAWs have become more familiar to both patients and healthcare personnel, and the services strive to offer more similar services. In addition, the hospital has been moved from the old building to a newly built one (after the study period). From the PhD candidate’s point of view, the conditions under which data were gathered were similar (for patients and GPs) in all three studies. The MAW is a new service that may evolve over time and consequently influence both patients’ and GPs’ experiences.

6.3.1 Validity of the qualitative studies

Validity in qualitative research refers to the ‘appropriateness’ of the processes and data collection. This includes, for example, whether the research question is valid for the desired outcome, the choice of methodology is appropriate for answering the research question, the design is valid for the methodology, the sampling and data analysis is appropriate, and finally the results and conclusions are valid for the sample and context (247). Qualitative researchers also discuss validity in terms of its trustworthiness, evaluating whether findings are credible interpretations of the participants’ data, the quality of the analysis and presentation of conclusions (dependability) and measurement of to what extent the study findings are supported by the data (confirmability), as well as the transferability of the findings (248).

A qualitative descriptive design, using thematic analysis to analyse the data, was used to describe GPs’ and patients’ experiences with the treatment and care quality in MAWs. This method is suitable, because it captures the complexity and contradiction that characterize the real world, yet allows the researchers to make sense of patterns of meaning (249).

Credibility includes a confidence in the ‘truth’ of the findings. In the current studies, credibility was achieved by providing a thorough description of the data collection, as well as of the steps of the thematic analysis. Relevant literature was used when developing the research questions and the interview guides, as well as when discussing and interpreting the findings. The choice of semi-structured interviews gave information that enabled the researchers to describe both patients’
and GPs’ experiences with MAWs. Participants were continuously asked what they really meant during the interviews, and participants’ statements were mirrored with the interviewer asking for correction or approval to verify that they had interpreted the participants correctly. This could also have been resolved by letting the participants read through the transcripts, but this was not done in the current studies.

To ensure dependability, and to show that the findings were consistent and that the study could be repeated, a digital recorder was used in both GP and patient interviews. In addition, rigorous and thorough orthographic transcripts, as well as a verbatim account of all verbal and nonverbal (e.g., coughing, laughing) utterances, were made. This enabled the researchers who did not participate in the interviews to verify the results.

Confirmability was achieved through discussion of the codes, subthemes and themes among the researchers until agreement was achieved. This included an evaluation of whether the findings were shaped by the respondents and not as bias due to the researchers’ motivation or interest. Therefore, a process of reflexivity, including continuous scrutiny of the first author’s impressions, positioning and emotional investment, was applied throughout the data collection phase, as well as during the analysis, to achieve fair interpretations (157). Before conducting each interview, the PhD candidate noted down impressions and pre-assumptions that had the potential to influence the interview. After each interview, detailed notes on contextual observations were made. Initially, two of the researchers independently coded the transcripts line by line. The initial codes were compared and discussed until agreement was achieved. The PhD candidate then performed the stepwise analysis. Codes, subthemes and themes were discussed in the research group until consensus was reached.

Finally, transferability includes showing that the findings are applicable in other contexts. Transferability is considered a form of external validity, which refers to the degree to which findings can be transferred to situations outside the study that generates the findings (248). It could seem like the issues highlighted in the thesis are solely of national concern (as also noted by the editor of an international journal to which one of the papers was submitted). Yet, findings from the qualitative study on patients’ experiences supported findings from the quantitative study (few problems reported in relation to respect), and findings are in line with those from similar organizations. Moreover, similar reforms have been
launched in several other countries, including ‘Shifting the Balance of Care’ in Scotland (250), ‘Health Closer to People’ in the Netherlands (251), and the ‘National Primary Health Care Strategic Framework’ in Australia (97), all of which aim to improve primary healthcare services. Hence, the essentials of the results in this thesis appear to be transferable and of interest to healthcare providers, leaders and politicians, both nationally and internationally.

In the literature, discussions are ongoing about whether it is possible to measure reliability in qualitative research (252). Lincoln and Guba have stated that: ‘Since there can be no validity without reliability, a demonstration of the former [validity] is sufficient to establish the latter [reliability]’ ((248), page 316)

6.3.2 Validity of the quantitative study

The aim of translating a questionnaire is to achieve a high degree of similarity between the original version and the translated version (150). Even so, the questionnaire may not be reliable in a new cultural and linguistic setting, and as a consequence, the translated version has to be psychometrically tested (253). Content validity means that the instrument measures what it is intended to measure. Face validity refers to the respondents’ experiences with the questionnaire: whether it seems relevant according to the aim and purpose of the study (150).

Face validity of the Norwegian PPE-15 was tested by distributing the questionnaire to 10 patients prior to the study period. Testing of face validity revealed no problematic issues related to wording or scoring of the questionnaire. If the test had revealed wording or scoring problems, further iterations would have been needed, and actions would have been taken to address the patients’ feedback.

To assess content validity of the PPE-15, we investigated the correlation between PPE-15 and the Nordic Patient Experience Questionnaire (NORPEQ), which has previously been validated in Norwegian. The NORPEQ consists of six questions that cover important aspects of the healthcare encounter and is scored from worst experience (0) to best experience (100) (169) (the NORPEQ has two additional questions not included in the index regarding overall satisfaction and the experience...
of adverse events). Content validity was tested by correlating PPE-15 items to the NORPEQ questionnaire using Spearman rho (254). It was hypothesized, since the PPE-15 and the NORPEQ do not capture exactly comparable aspects of patient experiences, that generally moderate correlation would be found between the two questionnaires. NORPEQ item two was hypothesized to have overall low correlation to the PPE-15, since none of the items in PPE-15 measure doctors’ professional skills. The correlations between the PPE-15 and the NORPEQ were generally low to moderate, and varied between -0.46 - 0.43. Correlations were generally higher in items hypothesized to be more closely related. In the two questionnaires, patient experiences have a somewhat different focus and this may potentially explain the relatively low values. In retrospect, other questionnaires, such as the patient experience questionnaire PasOpp, could have been more appropriate to assess content validity (255). However, other instruments contain different aspects of healthcare and also have a different focus.

In order to measure test-retest reliability, a randomly drawn subgroup of patients was invited to fill out the PPE-15 a second time, approximately 3 weeks after the first completion. Invitations to participate in retests were sent out consecutively as completed questionnaires were received until a number of 100 participants was reached. The final number of retests received was 154 due to the delay in reception. The literature suggests that only patients in a stable condition should be included in the re-test (243). A question was added on the retest asking whether the patients’ condition was unchanged (stable), had deteriorated or had improved, and the study only included the patients reporting to be stable/unchanged. Regarding time from test to retest, the literature differs, but approximately 2 weeks is generally considered appropriate (256). An insufficient time period might allow respondents to recall their first answers, and a longer interval might allow for a true change of the construct to occur (243). Test-retest was calculated using intraclass correlation coefficient (ICC) (184). Test-retest ICC was 0.90 (above the recommended acceptable level) and consequently the Norwegian version of the PPE-15 can be regarded as a reliable measure (222, 257-260).

The PPE-15 has good internal consistency, with a Cronbach’s alpha coefficient (25) reported as 0.82 (in our study=0.83) (171, 261). The EQ-5D-3L had good internal
consistency, with a Cronbach’s alpha coefficient of 0.70 (176). There are different opinions about the acceptable values of alpha, ranging from 0.70 to 0.95. If alpha is too high it may suggest that some items are redundant as they are testing the same question but in a different guise. A maximum alpha value of 0.90 has been recommended (262). Alpha values $0.9 > \alpha \geq 0.8$ have been defined as good internal consistency and $0.8 > \alpha \geq 0.7$ as acceptable (263).

The study is repeatable, and a similar interpretation may be possible.
7.0 SUMMARY

This thesis contributes with important insights into patients’ and general practitioners’ perspectives on the decentralized acute healthcare services as offered in MAWs. Even though patients found these new wards to be high quality, safe service providers, GPs’ experiences show that there were doubts amongst professionals as to whether the MAWs can deliver treatment of the same quality as the hospital. The GPs very much agreed that from the patients’ perspective, the MAW represented a better service. But, to them as physicians, many other issues had to be considered before they judged the MAW services to be of the same, or even better quality than hospital services. In contrast, patients’ experiences with MAWs show that patients found that the MAWs offered good (and even preferable) alternatives to hospitalization when they were not in need of specialized healthcare services and diagnostics. Yet, findings from the questionnaire identify that several patients experienced problems, especially related to continuity and transitions. This indicates that the CR’s aim to enhance coordination and continuity still needs focus and improvement.

7.1 Conclusions

- GPs emphasized that patients preferred being admitted to MAWs.
- GPs found it difficult to assess which patients who were suitable for admittance to a MAW.
- GPs did not feel certain that the MAWs could offer safe and quality services to their patients.
- Pressure from patients, relatives, colleagues, leaders and politicians was reported to negatively impact GPs’ decision-making.
- MAWs were seen as an additional healthcare service, and not as an alternative to hospitalization, as intended in the Coordination Reform.
- Patients perceived decentralized acute healthcare services as comparable to the quality they would have expected in hospitals.
- Geographical proximity and more time devoted to care were aspects stressed
by patients as positive features of the MAWs.

- Lack of diagnostic resources was seen as a limitation.
- MAWs were considered to offer patient-centred care.
- The Norwegian version of the PPE-15 can be used to capture patient experiences with primary acute healthcare.
- Comorbidity is the only factor that influenced patients’ experiences with primary acute care.
- Both patients and GPs perceived that MAWs were almost like hospitals, yet different.

7.2 Future perspectives

This PhD study produced a large amount of data, both qualitative and quantitative, some of which were not utilized in any of the four papers included in this thesis. These data may of course be analyzed further and included in future papers with other objectives. Future research may, for instance, look more closely at the influence of admission diagnosis or medication/treatment received on patient experiences, follow-up after discharge from MAWs or the hospital, or to evaluate whether the patients’ responses to the questionnaires are in line with their interview reports.

When considering services which intend to be substitutes for hospital care, several questions have been asked: 1) Are these services real alternatives to hospital care or are they complements? 2) Do they allow better management of current demand, or do they increase activity? 3) Is the result a more cost effective health service, a higher quality service, both, or neither? (264). Municipality acute wards represent a new way of organizing acute healthcare services and an alternative to hospital admission. Whether this will lead to better use of resources and more efficient healthcare services in the hospital sector needs to be further investigated. The studies presented in this thesis show that from the patient perspective, MAWs are mostly experienced as providing safe and quality services while GPs are more sceptical about the quality of the MAWs’ services. Further research, preferably with a randomized controlled design, should explore whether medical quality, as
measured by, for example, morbidity, mortality or readmissions, and patient reported quality differ between patients admitted to MAWs and to hospitals.

Furthermore, findings in this thesis should be utilized in quality improvement initiatives in the MAWs. One suggestion would be to include patient experiences as quality measures in primary healthcare services, as they are in specialist healthcare services.

This project provides an excellent background for further research on MAWs and other decentralized acute healthcare services, as well as healthcare provision both nationally and internationally.
8.0 REFERENCES


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APPENDIX 1. INTERVIEW GUIDE GENERAL PRACTITIONERS

BACKGROUND INFORMATION

Age
When did you complete your medical education?
Have you been practicing as a doctor other places than here?
Have you been part of the development and implementation process for the MAWs in your municipality?

THEME: ADMISSION CRITERIA

- Have you admitted patients to the municipality acute ward? If yes: can you describe what kind of patients these were? Follow up question: Were these patients you otherwise would have admitted to the hospital? If no: Do you have any thoughts as to why you have not admitted patients to this ward?
- Do you have any thoughts about criteria a patient should fulfil before you as a general practitioner would chose to admit him or her to the MAW? (Follow-up question: Are there formal criteria for admission? Do you have any thoughts about these?
- Under which circumstances would you chose to admit a patient to the hospital?
- Do you have any thoughts about the geographical location of the MAW? Or the hospital?
- Do you experience the collaboration between yourself and the doctors at the MAW as different from the collaboration with the doctors in hospital?
- Have you on any occasion disagreed with the doctors at the MAW about a patient's condition and where he or she should be admitted? Can you describe this situation?
- If in doubt about where to admit the patient, what causes your uncertainty?

THEME: QUALITY

- What are your thoughts about the healthcare services at your local MAW? (Follow-up question: What are your thoughts about the competence of the personnel? Do you have any thoughts about additional services offered?)
- What are your thoughts about the physical environment/location of the MAW?
If you compare your thoughts about the MAW with your thoughts about the hospital: are there differences? Are there similarities?

THEME: SECURITY

- Can you describe a concrete positive experience you have had after admitting a patient to the MAW?
- Can you describe a negative experience you have had after admitting a patient to the MAW?
- Have your thoughts about the MAW's services changed over time or with increased experience with the services? (If yes: have they changed in a negative or positive direction?)

THEME: FUTURE PERSPECTIVES

- Do you have any thoughts about the coordination reform/government's demands on offering acute healthcare services to the inhabitants in the municipalities in the future?
- Has the establishment of MAWs had any effect on your work as a general practitioner?
- Can you give a description of the information you have received about the MAWs? (Follow-up: Do you have any thoughts about how this could have been done differently?)

CONCLUSION

- Is there anything else regarding the MAWs that you have had in mind, or that you wish to tell more about?
APPENDIX 2. INTERVIEW GUIDE PATIENTS

Welcome. Information about the project, as well as the opportunity to withdraw from the project at any time, without any personal consequences. Background information: Age, present work, do you receive any help from municipal health services (e.g. home health care).

THEME: QUALITY

- Can you please tell me a bit about your health and why you received treatment at [the MAW]?
- Can you please tell me a bit about your stay at [the MAW]? (Follow-up: What was important to you during your stay?)
- How would you describe the treatment you received at [the MAW]?
- How did you experience the communication with the staff? (Follow-up: Can you please describe a concrete situation in which you had this experience? Did you feel that they were interested in your situation? Did you participate in decision making regarding your treatment and care? Were there differences between different personnel?)
- Did you have any treatment expectations at the time of admittance? (Follow-up: To what extent did your treatment meet your expectations?)

THEME: SAFETY AND VULNERABILITY

- Did you feel taken care of at [the MAW]? (Follow-up: Can you please describe a concrete situation in which you had this experience?)
- Can you please tell me about your perception of safety/unsafety during your stay at [the MAW]? (Follow-up: Did you trust the doctors' professional competence?)
- How did you feel the personnel treated you if you asked any questions? (Follow-up: Did you have questions? How did the personnel act if you were anxious or worried about something? Can you please describe a concrete situation in which you had this experience?)
• What do you think about the information you received about results, treatment and your diagnosis/your condition?
• Have you received treatment in hospital before? If yes: how would you compare your previous experiences with the treatment you received at [the MAW]?
• Do you think your experience would have been different if you had been admitted to the hospital? If yes: In what way?
• If you compare hospital and [the MAW], what are the similarities and differences regarding patient treatment?
• Do you have any thoughts about the geographical location of [the MAW]?
  (Follow-up: Do you find the location in your local environment positive or negative?)

CONCLUDING QUESTIONS

• What was particularly good about the treatment you received?
• What was not so good about the treatment you received?
• Overall, what did you find most positive about your stay?
• What did you find most negative about your stay?
• Is there anything I haven’t asked you about that you would like to add?
APPENDIX 3. SPØRRESKJEMAET

Pasienterfaringer etter opphold på Helsehus - Kommunale akutte døgnplasser (KAD)
Informasjon om undersøkelsen
Målet med undersøkelsen, som er et samarbeid mellom Høgskolen i Østfold, kommunene i Østfold og Sykehuset Østfold, er å få verdifull informasjon som kan bidra til å forbedre helsetjenesten før deg som pasient.

Vi ber DEG, eventuelt med hjelp fra dine pårørende, om å svare på vedlagte spørreskjema etter beste evne, samt signere samtykkeerklæringen. Vi vil bruke data fra din innleggselse for å kunne danne oss et best mulig bilde av hva som påvirker opplevelsene. 

Det finnes ingen «fasit» på hvordan behandlingen og oppfølging skal fremstå eller være. Vi er opptatt av hvordan nettopp DU har erfart DITT opphold! For enkelte av dere vil spørsmål knyttet til medbestemmelse om behandling eller oppfølgelse være mindre aktuelt. I så tilfelle vil det ved de aktuelle spørsmål være mulig å svarer: IKKE AKTUELT.

DITT SVAR ER VIKTIG FOR OSS – Vi ber derfor om at svarene returneres i vedlagte frankerte konvolutt.

Vennlig hilsen
Ann-Chatrin Leonardsen (Prosjektleder, Tlf: 41 66 87 97)

Samtykke til deltakelse i studien

**Jeg** er villig til å delta i studien

------------------------------------------------------------------------------------------------------------------
(Signatur, dato)

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Hvem fyller ut spørreskjema? (vennligst sett et kryss)

☐ Pasienten selv

☐ Pårørende i samarbeid med pasienten

☐ Pårørende på vegne av pasienten
BAKGRUNNSDATA

1. ALDER OG KJØNN

Fødselsår | Kjønn (Kryss)
----------|----------------
Maan □ Kvinne □

2. HVA ER DIN SIVILSTATUS?

(Seitt kryss i aktuell rute)

Gift/i parforhold □
Enslig □
Enke/Enkemann □
Kjæreste □

3. BOR DU ALENE?

Nei □ Ja □

4. HVA ER DITT HØYESTE FULLFØRTE UTDANNINGSNIVÅ?

Grunnskole/Folkeskole □
Videregående/Gymnas □
Universitet/Høgskole □

5. ER DU I ARBEID?

Nei □ Ja □
### Under hver overskrift

Ber vi deg krysse av den ENE boksen som best beskriver helsen din I DAG.

#### GANGE

Jeg har *ingen* problemer med å gå omkring

Jeg har *litt* problemer med å gå omkring

Jeg er *ute av stand* til å gå omkring

#### PERSONLIG STELL

Jeg har *ingen* problemer med personlig stell

Jeg har *litt* problemer med å vaske meg eller kle meg

Jeg er *ute av stand* til å vaske meg eller kle meg

#### VANLIGE GJØREMÅL (f.eks. arbeid, studier, husarbeid, familie- eller fritidsaktiviteter)

Jeg har *ingen* problemer med å utføre mine vanlige gjøremål

Jeg har *litt* problemer med å utføre mine vanlige gjøremål

Jeg er *ute av stand* til å utføre mine vanlige gjøremål

#### SMERTER/UBEHAG

Jeg har *hverken* smerte eller ubehag

Jeg har *moderat* smerte eller ubehag

Jeg har *sterk* smerte eller ubehag

#### ANGST/DEPRESJON

Jeg er *hverken* engstelig eller deprimert

Jeg er *noe* engstelig eller deprimert

Jeg er *svært* engstelig eller deprimert

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• Vi vil gjerne vite hvor god eller dårlig helsen din er I DAG.

• Denne skalaen er nummerert fra 0 til 100.

• 100 betyr den beste helsen du kan tenke deg.
  0 betyr den dårligste helsen du kan tenke deg.

• Sett en X på skalaen for å angi hvordan helsen din er I DAG.

• Skriv deretter tallet du merket av på skalaen inn i boksen nedenfor.

HELEN DIN I DAG =  

Den beste helsen du kan tenke deg

Den dårligste helsen du kan tenke deg
De neste spørsmål handler om DINE erfaringer. Vennligst RING rundt det svaret DU synes passer best sett for DEG (En ring per spørsmål).

1. Når du hadde viktige spørsmål å stille til legen, fikk du da svar som du kunne forstå?
   - Ja, alltid
   - Ja, noen ganger
   - Nei
   - Jeg trengte ikke spørre om noe

2. Når du hadde viktige spørsmål å stille til en sykepleier, fikk du da svar som du kunne forstå?
   - Ja, alltid
   - Ja, noen ganger
   - Nei
   - Jeg trengte ikke spørre om noe

3. Det hender noen ganger at en lege eller en sykepleier sier en ting, og en annen sier noe helt annet. Skjedde dette med deg?
   - Ja, ofte
   - Ja, noen ganger
   - Nei

4. Dersom du var engstelig eller hadde bekymringer knyttet til din tilstand eller behandling, snakket en lege med deg om dette?
   - Ja, fullstendig
   - Ja, i noen grad
   - Nei
   - Jeg var ikke engstelig eller bekymret

5. Opplevde du at legene snakket om deg som om du ikke var til stede?
   - Ja, ofte
   - Ja, noen ganger
   - Nei

6. Ønsket du å være mer involvert i beslutninger som ble gjort om din pleie og behandling?
   - Ja, definitivt
   - Ja, til en viss grad
   - Nei
7. Totalt sett, følte du at du ble behandlet med respekt og verdighet?

<table>
<thead>
<tr>
<th>Ja, alltid</th>
<th>Ja, noen ganger</th>
<th>Nei</th>
</tr>
</thead>
</table>

8. Dersom du var engstelig eller hadde bekymringer knyttet til din tilstand eller behandling, snakket en sykepleier med deg om dette?

<table>
<thead>
<tr>
<th>Ja</th>
<th>Ja, til en viss grad</th>
<th>Nei</th>
<th>Jeg var ikke engstelig eller bekymret</th>
</tr>
</thead>
</table>

9. Opplevde du at det var noen blant personalet du kunne snakke med om dine bekymringer?

<table>
<thead>
<tr>
<th>Ja, definitivt</th>
<th>Ja, til en viss grad</th>
<th>Nei</th>
<th>Jeg hadde ingen bekymringer</th>
</tr>
</thead>
</table>

10. Hadde du noen gang smerter?

<table>
<thead>
<tr>
<th>Ja</th>
<th>Nei</th>
</tr>
</thead>
</table>

Dersom ja:
Synes du personalet gjorde alt de kunne for å lindre smertene?

<table>
<thead>
<tr>
<th>Ja, definitivt</th>
<th>Ja, til en viss grad</th>
<th>Nei</th>
</tr>
</thead>
</table>

11. Dersom dine pårørende ønsket å snakke med en lege, fikk de tilstrekkelig mulighet til å gjøre dette?

<table>
<thead>
<tr>
<th>Ja, definitivt</th>
<th>Ja, til en viss grad</th>
<th>Nei</th>
<th>Pårørende ble ikke involvert</th>
<th>Jeg ønsket ikke at mine pårørende skulle snakke med legen</th>
</tr>
</thead>
</table>

12. Ga legene og sykepleierne dine pårørende informasjon som var nødvendig for å hjelpe deg å bedre helsetilstanden din?

<table>
<thead>
<tr>
<th>Ja, definitivt</th>
<th>Ja, til en viss grad</th>
<th>Nei</th>
<th>Pårørende ble ikke involvert</th>
<th>Pårørende ønsket ikke eller trengte ikke informasjonen</th>
</tr>
</thead>
</table>
13. Forklarte noen i personalet på en måte du kunne forstå, hensikten med medisinene du skulle ta når du kom hjem?

| Ja | Ja, til en viss Grad | Nei | Jeg trengte ikke forklaring/jeg brukte ikke medisiner – Gå til spørsmål 15 |

14. Forklarte noen i personalet om bivirkninger av medisiner som du skulle se opp for når du kom hjem?

| Ja | Ja, til en viss Grad | Nei | Jeg trengte ikke forklaring |

15. Når det gjelder din sykdom eller behandling, forklarte noen i personalet deg om faresignaler du skulle se opp for når du kom hjem?

| Ja | Ja, til en viss grad | Nei |

**TAKK FOR AT DU TOK DEG TID TIL Å BESVARE**
ERRATA

Errata list for Ann-Chatrin Linqvist Leonardsen’s dissertation “Experiences with decentralized acute healthcare services from different stakeholders’ perspectives. A mixed methods study”.

1. Page 15, line 26 - insert the word “de”.
2. Page 34, line 24 - replace the number “74” with “73”.
3. Page 44, table 2, 6th column – remove line between “blood” and “sample”
4. Page 57, line 7 – remove dot in front of parenthesis and insert after. From “Quan et al (178).” To “Quan et al. (178).”
5. Page 59, line 12 – replace ”reseracher’s” with ”researcher’s”
6. Page 65, line 8 – Change from “three aspects” two “two aspects”.
7. Page 65, line 9 – delete “c) being looked after”.
9. Page 82, line 16 – replace “reserachers” with “researchers”
10. Page 82, line 24 - replace “reserachers” with “researchers”.

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