Early Nurse Management Experiences from Finnish Primary Health Care Clinics Functioning as COVID-19 Care Sites

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The COVID-19 health care crisis has burdened health care systems around the world. Primary health care (PHC) organizations are the point of access for many patients; however, the focus of crisis response work has been in securing hospital capacities. The purpose of this study was to describe the early nurse management experiences in PHC clinics in the greater Helsinki area dedicated to caring for patients with possible COVID-19 symptoms during the COVID-19 epidemic. The study objectives were to make PHC crisis response contributions known and to provide an in-action-review of crisis response efforts. Nurse managers from the four COVID-19 care sites in the capital area were interviewed using thematic pair interviews. The data were analyzed inductively using thematic analysis, by which four main themes emerged: capacity development leading to a state of flux, importance of infection prevention in COVID-19 crisis response work, management of staff during crisis response work and overall experiences. The nurse managers spoke of how capacity development has led to a state of flux which has lasted over a year and continues to stress the provision of PHC services. Conversation surrounding infection prevention control (IPC) measures was significant and some discrepancies were evident, suggesting that global efforts to increase and standardize IPC standards must begin within our local communities. Leadership methods were developed to accommodate for the crisis, especially regarding the motivation of staff with limited resources. Nurse managers of COVID-19 care sites have stood in the face of uncertainty and have led their staff with resilience through the beginning of an unprecedented global crisis. They now need more support in motivating nursing staff as the focus of crisis response work shifts to crisis recovery work. A vision towards which to aspire is needed.

Contents

1   Introduction

In December 2019 and in the Chinese province of Hubei, an outbreak of pneumonia occurred in the city of Wuhan. The etiology of the new disease was unknown but immediate efforts were made to investigate. On the 7th of January 2020, scientists found the cause of the pneumonia to be a novel strain of the coronavirus. Human-to-human transmission was observed when health care workers (HCWs), caring for patients with this new disease, fell ill. Widespread transmission was feared, and lessons learned from the 2003 severe acute respiratory syndrome-coronavirus (SARS-CoV) epidemic meant that the disease was quickly defined as a priority by Chinese health authorities. (Wang, Horby, Hayden and Gao 2020.)

The World Health Organization (WHO 2020a) describes the novel coronavirus disease (COVID-19) as a new disease caused by a particularly contagious pathogen, which is also known as the SARS-COV-2 virus. The global community has become well acquainted with COVID-19, as according to the WHO (2021c), there were over 83 million confirmed cases of COVID-19 globally at the beginning of the year 2021, and over 1.8 million deaths. In Finland at that time, there were 36,107 confirmed cases and 561 deaths. (WHO 2021c.) Globally, everyone is rallying in their efforts to control the spread of the disease.

Finland succeeded in slowing the spread of COVID-19 during the first epidemic wave in the spring of 2020. The Emergency Powers Act was enacted on the 16th of March 2020, and population-wide restrictions were implemented to contain and mitigate the growing epidemic. The peak of the first epidemic wave in Finland is defined to be the 8th of April 2020, when the country's intensive care units (ICU) saw the largest number of new COVID-19 patient admissions for a single day, at 19 new admissions. After this date, the number of ICU admissions and overall new confirmed cases began to steadily decrease. After the 6th of May 2020, the Finnish Government began gradually transitioning to a hybrid strategy of containment and mitigation, which aimed to lift restrictions in a controlled manner and transfer governmental powers to those outlined in the Communicable Diseases Act. (Finnish Government 2020c.)

In outlining the surge capacity plans for the COVID-19 crisis response work, the Finnish Government's focus was heavily on hospital and ICU capacities. While these capacities were essential in securing necessary emergency and specialized health care for Finnish citizens during the beginning of the COVID-19 epidemic, the narrow focus disregards the role of the primary health care (PHC) organizations. After the Emergency Powers Act was enacted and according to the recommendations of the Ministry of Social Affairs and Health (STM), the three cities in the capital area of Finland each dedicated a PHC clinic to care for COVID-19 cases and suspect cases (Valtanen 2020). The aim was to isolate COVID-19 cases and suspect cases from

other patients (STM 2020d). Just as ICU capacities were raised in a short period of time by postponing non-essential care, PHC organizations raised their capacity to include a completely new service requiring the efforts and resources of complete clinics. Primary health care organizations, therefore, play a crucial role in frontline crisis response work, and their efforts and contributions should not go unnoticed.

The purpose of this study is to describe the early nurse management experiences in PHC clinics in the greater Helsinki area dedicated to caring for patients with possible COVID-19 symptoms during the COVID-19 epidemic. The objectives are to make their crisis response contributions known and to provide an in-action-review (IAR) of PHC COVID-19 crisis response efforts.

2 COVID-19 health care crisis management

Crises are exceptional situations in which common protocols or plans often do not suffice. They require flexible, creative, and strategic solutions that are often created quickly and in response to situational fluctuations and changes. The need for information surpasses its availability and leaders must show confidence and authority despite this. Situational awareness and effective communication skills are crucial to crisis management. The British Standard Institute (BSI) defines crisis management to be the development and implementation of an organization's capability to respond to crises. Effective crisis management also plans for the crisis recovery process. Insufficient crisis recovery efforts can potentially lead to a new crisis and recovery efforts should begin as soon as possible. A good crisis recovery plan creates opportunities for organizational development. (BSI 2014.)

Health systems are at risk of crises due to hazards which may threaten capacity, including health events such as pandemics. The WHO (2017b) recommends a risk-based approach to pandemic management based on a national risk assessment which allows for situational flexibility. As pandemics affect the whole of society, risk management should include coordinated efforts from all essential service providers within both the public and private sectors. The approach should ideally focus on managing risk over managing health events and would ideally be tailored in such a way that it can be applied to all hazards. The process includes risk assessment, mitigation, prevention, preparedness, response, recovery, and strengthening of capacities. (WHO 2017b.)

Epidemics and pandemics are not new phenomena. The COVID-19 health care crisis has been compared to the deadliest pandemic in recent history, the Spanish flu of 1918 (Stewart et al. 2020). The crisis response efforts in Finland at the time, included quarantines and isolation, disinfection of patients' homes, forbidding gatherings of large numbers of people, organizing

health campaigns on hygiene and prevention, and raising standards of living conditions. Influenza clinics were organized in Helsinki, which had nurses making home visits and caring for the ill and vulnerable. During the Spanish flu epidemic, it was the Finnish newspapers that suggested fabric masks and the government was criticized for its passive response. (Linnanmäki 2005.)

Epidemic and potentially epidemic acute respiratory infections (ARIs) of the past have outlined the importance of preparedness plans. Preparedness plans should be made utilizing multi-professional teams and their action plans should be practiced. They include details on before, during and after the public health event concerning surveillance, triage, surge capacity, access, crisis communication, infection prevention and control (IPC) guidelines and supplies, occupational health, patient flow planning, mortuary, and outpatient care. The ultimate goals are to identify, isolate and report cases of potentially threatening ARIs to reduce the risk of nosocomial transmission and to uphold the functionality of health care systems for both epidemic and non-epidemic related health care needs. The efficiency of crisis response work is dependent on the level of preparedness. (WHO 2014.)

Early in the COVID-19 pandemic, examples of overwhelmed health care systems in China and Italy provided data for countries around the world to model potential epidemic situations and their effects on health care capacities (Kattainen, Kiiski, Bendel, Jokinen, Reinikainen and Varpula 2021). The Finnish Institute for Health and Welfare (THL) had predicted on the 25th of March 2020 that the peak of the first epidemic wave could potentially mean over 900 simultaneously hospitalized COVID-19 patients in Finland, of which 280 would need ICU level care (THL 2020b). These models were the basis for crisis response work in Finland, as according to the models, COVID-19 could become a real threat to the Finnish health care system (Kattainen et al. 2021).

2.1 Epidemic situation in Finland

The COVID-19 crisis began in December 2019, when the novel coronavirus was first seen in Wuhan, China in the form of a cluster of pneumonia cases with an unknown etiology (Wang et al. 2020). A few months later, COVID-19 was declared a pandemic on the 11th of March 2020 by the WHO. At that point in time, Finland had a total of 40 confirmed cases of COVID-19 and no deaths associated with the disease. (WHO 2020b.) The peak of the first epidemic wave was seen during week 15 of year 2020 on April 8th (Finnish Government 2020c). Figure 1 depicts the number of new COVID-19 cases in Finland from week 5 of year 2020 to week 5 of year 2021, in comparison with the number of self-reported COVID-19 symptoms requiring urgent care. It shows the relationship between those with possible COVID-19 symptoms and the number of confirmed COVID-19 cases and is relevant to the context of this study.
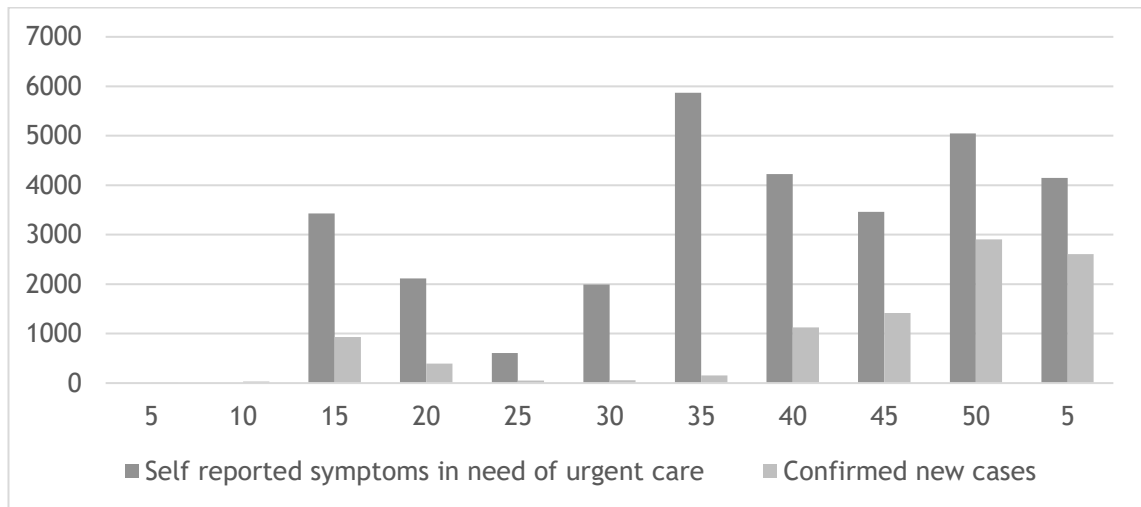
Figure 1: Self-reported COVID-19 symptoms in need of urgent care vs. new COVID-19 cases in Finland during weeks 5/2020 to 5/2021 (THL 2021a, THL 2021d)

Finland is a small northern European country with a population of 5,533,793 (at the end of the year 2020). The greater capital area comprises of three cities, Helsinki, Espoo, and Vantaa. Helsinki is the largest city in Finland with a population of 656,920. The cities of Espoo and Vantaa are second and fourth largest cities with populations of 292,796 and 237,231, respectively. (Statistics Finland 2020). Large urban areas are more susceptible to communicable disease events and a concentration of COVID-19 cases is seen in the capital area of Finland (Madad, Moskovitz, Boyce, Cagliuso and Katz 2020, Finnish Government 2020c). Figure 2 shows the number of new COVID-19 cases in the capital area of Finland by the three cities, from week 5 of 2020 to week 5 of 2021. As is evident, the City of Helsinki has had more confirmed cases of COVID-19 than the cities of Espoo or Vantaa.
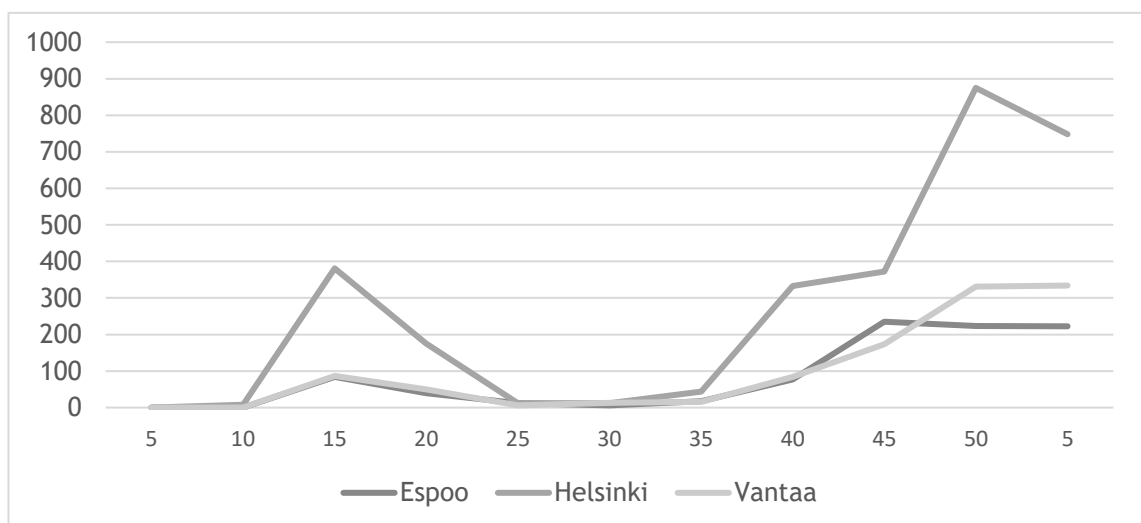
Figure 2: New COVID-19 cases in the capital area by city during weeks 5/2020 to 5/2021 (THL 2021d)

2.2   Political response to the COVID-19 health care crisis in Finland

The government of Finland declared emergency conditions on the 16th of March 2020 (Finnish Government 2020b). Exceptional situations and emergency conditions, as defined by Finnish law, are five. The first two refer to an attack against Finland or the threat of an attack. The third is defined to be a situation in which the welfare or economy of Finland is threatened in such a way, as to risk the functionality of the country. The fourth is defined to be an exceptionally serious mass casualty incident and its aftermath, and lastly, the fifth as a situation in which a dangerous and contagious pathogen is widespread. Invoking emergency conditions grants the Finnish Government exceptional powers to protect its citizens, livelihood, economy, and independence, as well as to uphold the judicial system, human rights, and the constitutional rights of its citizens. (Finland 2011.)

In order to slow the spread of the virus within the population, the government implemented certain nation-wide restrictions. National borders were closed soon after emergency conditions were declared and all returning travelers were required to self-quarantine for 2 weeks upon arrival in Finland. Schools and public places were closed, and day-cares minimized operations. Parents were asked to keep their children home, if possible, and everyone who could possibly work from home was encouraged to do so. Gatherings were restricted to a maximum of 10 persons, and the public was strongly encouraged to practice social distancing. Elderly citizens over 70 years of age were advised to self-quarantine and visiting in nursing homes was forbidden. (Finnish Government 2020b.)

Travelling was restricted and Finnish citizens abroad were encouraged to return to Finland (Finnish Government 2020e). The border of the capital province of Uusimaa was closed on the 28th of March 2020 due to a higher rate of infection within the capital area (Finnish Government 2020d). Restaurants were closed later, on the 4th of April 2020 (Finnish Government 2020g). Provincial borders were reopened on the 15th of April 2020, though citizens were still encouraged to refrain from traveling within the country (Finnish Government 2020a). Figure 3 depicts relevant COVID-19 crisis related events in Finland.

2.2.1   The Finnish Government's hybrid strategy

Early restrictions worked well in slowing the progression of the epidemic, and Finland's COVID-19 strategy was re-evaluated and named the hybrid strategy on the 6th of May 2020. The goals of this strategy were still to prevent the spread of the virus, to secure the capacity of health care systems and to protect the most vulnerable populations. The aim was to use different situational analysis methods to provide information on the progression of the epidemic, and to react accordingly to an increase in the spread of the virus by implementing necessary restrictions at a regional level. (Finnish Government 2020c.) The hybrid strategy aimed to loosen restrictions that were implemented during emergency conditions. Re-

strictions were lifted in increments, and the effects of lifted restrictions were closely moni-
tored. The aim was to transition back to a containment strategy of testing, contact tracing,
isolating, and treating. The government reiterated that they did not want the virus to spread
and were not aiming for herd immunity in their decision to begin loosening restrictions. (Finn-
ish Government 2020f.)

Crisis management responsibilities were eventually transferred to the local governments and
the capital area of Finland put together a Corona Coordination Team. This team includes the
mayors of the three cities, the capital province's hospital district (HUS), representatives from
the THL, and the Regional State Administrative Agency (AVI) for southern Finland. This team's
aim is to monitor the epidemic situation in relation to the hybrid strategy, and to make deci-
sions accordingly and in a unified manner. The team publishes a weekly hybrid strategy report
using the City of Helsinki's website as a platform. The City of Helsinki is responsible for lead-
ing the team, though each stakeholder is ultimately responsible for their own area of influ-
ence. (City of Helsinki 2020a.)

12/2019: A novel coronavirus is identified in Wuhan China (Wang et al 2020)	→	29/01/2020: Finland has their first diagnosed case of COVID-19 (THL 2020c)	→	16/03/2020: Finland declares emergency conditions (Finnish Government 2020b)
20/03/2020: Finland has its first death associated with COVID-19 (THL 2020a)	→	08/04/2020: The peak of the first epidemic wave in Finland (Finnish Government 2020c)	→	06/05/2020: Finland transitions to the hybrid strategy (Finnish Government 2020c)
11/09/2020: A Corona Coordination Team is designated in Helsinki (City of Helsinki 2020a)	→	24/09/2020: Acceleration phase is declared in the capital area (City of Helsinki 2020b)	→	19/11/2020: Community transmission phase is declared in the capital area (City of Helsinki 2020c)

Figure 3: Important COVID-19 events in Finland

The Hybrid Strategy categorizes the epidemic situation into three phases which correspond
with three tiers of preventative measures (see Figure 4). The first phase is the baseline
phase, and this means that the epidemic situation is stable. The second phase is the accelera-
tion phase, and this means that the region within which the phase is declared, is seeing a
higher than baseline incidence rate. For instance, there may be several transmission chains at

either the local or regional level. The third phase is the community transmission phase. This phase is defined by widespread community transmission and difficulty in contact tracing. The three tiers of preventative measures are intended to be invoked in foresight, initially by municipalities and provinces together. If the epidemic numbers suggest that a locality or region is progressing into a higher epidemic phase, further restrictions must be considered. The national government will intervene if a direct threat to health care capacity is determined. (Finnish Government 2021.)

Tier 1: Baseline phase
Restrictions are at a minimal level but in place for as long as the epidemic continues.

Tier 2: Acceleration phase
The region within which this phase is defined, threatens the national epidemic situation and restrictions must be implemented. Restrcitions suitable for the community transmission phase are recommended.

Tier 3: Community transmission phase
This phase is defined by a direct threat to health care capacity and requires national government involvement.

Figure 4: Three tiers of preventative measures within the hybrid strategy (Finnish Government 2021)

2.3   Legislature and primary health care setting

The WHO (2020d) states that countries which have been successful in slowing the progression of their COVID-19 epidemics have also implemented health care systems that include diagnosing and treating mild cases. In outlining pandemic preparedness within health care, the WHO (2014) suggests that outpatient care be promoted by having ambulatory care facilities diagnosing, treating, and providing follow-up care according to the clinical status of patients. Primary health care can be described as ambulatory health care services and can be considered the frontline defense for COVID-19 crisis response work at the community level (WHO and UNICEF 2018, Heintzman et al. 2020). Hence, in relation to health care capacity development for COVID-19 crisis response work, it is critically important to outline both the capacities of acute and PHC services.

Primary health care, as defined by the WHO together with the United Nations Children's Fund (UNICEF), is an approach to health care that accounts for the whole of society. It considers both the proximity and equitable distribution of health care services according to individual

and community needs and preferences. Health care services and interventions are provided as early as possible to target both health promotion and prevention, treatment, rehabilitation, and palliative care. As an approach to protecting, promoting, and enhancing the health of populations, PHC is an efficient, effective, and equitable strategy. (WHO and UNICEF 2018.)

According to the Health Care Act (Finland 2010), each municipality in Finland is responsible for providing access to health care for its citizens in accordance with their needs. The needs of their citizens must also be actively monitored. These services broadly include medical and dentistry services in prevention, diagnostic procedures, diagnosis, treatment, and rehabilitation. Municipalities can choose to manage their own health care organizations, or then to contract the services from other municipalities or from the private sector. Citizens must have access to PHC providers during weekday business hours. A need-for-care assessment should be completed by a nurse on the day of initial contact, but by law, must be completed within three days. (Finland 2010.)

Finnish health care is divided into two areas, municipal and provincial services. Municipalities provide PHC services including urgent care, and the provinces provide emergency and specialized health care services. When a patient is referred to provincial services, the patient must be accommodated within 3 months of referral unless pressing reasons for the inability to accommodate within that time frame exist, and the postponing of care does not cause harm to the patient. Close collaboration between the two authorities is required by law in consultation services, laboratory work and emergency preparedness. (Finland 2010.)

According to the Emergency Powers Act (Finland 2011), in a national emergency health care organizations can expect to receive work orders or changes to normal working patterns as the Finnish Government sees fit. In the context of health care, the Emergency Powers Act also gives the government the power to give HCWs work orders, to require overtime, and to limit termination of employment in the instance that the provision of essential health care services would otherwise be compromised. In practice, this means that anyone between the ages 18 and 68 with a permanent address in Finland and health care education (some exceptions apply), can be given a work assignment within health care. This work order can be a maximum of 2 weeks' time and can be renewed only once. (Finland 2011.)

The Communicable Diseases Act (Finland 2016) states that the general planning, guidance, and monitoring of infection prevention in exceptional situations is the responsibility of the STM. The THL is an expert panel that supports the STM, municipalities, and provinces with guidelines and monitoring of epidemiological trends. At the local level, municipalities are required to employ a physician whose main responsibilities are in infection prevention. This physician is responsible for following up and investigating notifiable communicable diseases that emerge in the community, as well as taking necessary action according to the investiga-

tion results. This work includes the prevention of communicable diseases, early diagnosis and monitoring thereof, epidemic investigations and containment measures, as well as the treatment and rehabilitation of patients with communicable diseases. Municipalities are responsible for implementing infection prevention work with the support of provincial services. Provincial services in this context include expert consultation, diagnostic and treatment services, and support in outbreak investigations. (Finland 2016.)

According to Linnanmäki (2005), the Spanish flu pandemic could have been the motivation for developing public health systems in Finland. Lehtomäki (2009) claims that the concept of PHC providers within the public health sector in Finland was developed later in 1972. Primary health care providers in Finland are multi-professional organizations that care for the health and wellbeing of the municipal populations within which they are situated. Before the PHC development, it is estimated that 90% of health care costs were incurred due to specialized services. Now, with the public health focus on PHC, specialized health care accounts for around just 5% of total health care costs. (Lehtomäki 2009.)

The purpose of PHC organizations in Finland is to enhance both health promotion and prevention services, and to promote health equity. As multi-professional organizations, patients are cared for by an assortment of health care professionals. In 2002, there were about nine HCWs in the PHC setting per one thousand municipal residents, of which only 0,7 were physicians. The management of the PHC clinics was first delegated to their physicians, but administration has since been divided into medical, nursing, and financial sects. This means that each PHC clinic has a head physician and a nurse manager. The significance of nurses in PHC settings has grown, mostly due to physician shortages requiring that some responsibilities be transferred from physicians to nurses. This increase in nurses' responsibility within PHC clinics has decreased the need for urgent physician-led appointments by an estimated 15-25%. A total of 28% of urgent appointments were held by nurses alone. (Lehtomäki 2009.) This speaks for the significance of nurses within Finnish PHC clinics, and inadvertently implies that their nurse managers' role in leadership is significant as well.

In China, PHC providers struggled with role ambiguity and lack of resources at the beginning of the COVID-19 crisis. The problems revealed by the crisis within PHC reflect deeper issues within health care systems. The crisis can be utilized as an opportunity to better communication between PHC providers and policy makers, and to develop more patient-centered and resilient health care systems. (Xu, Wang, Qian, and Lu 2020.)

2.4   Capacity development for the COVID-19 health care crisis

Capacity is somewhat of an ambiguous term. Definitions of capacity can be classified into two distinct ways of thinking; technical and human centered. A technical focus defines capacity to be a top-down process concerned with tangible logistics, systems, structure, and organiza-

tion. Capacity in this form aims for better outcomes and focuses on needs, problem-solving and application of knowledge. A human focus, however, defines capacity more intangibly with capacity being in the form of behavior and values. This is a bottom-up approach that suggests that strengths such as leadership, adaptability, and capabilities are utilized as capacity. Operational capacity encompasses elements of both and is a form of collective ability. Development of capacity can be either intentional or indirect. It is change that supports the development of new capacity. Change is constant; therefore, capacity development is a multi-faceted process that is happening beneath the surface at any given moment in time. Sustainable systems are those that adapt best to change. (Morgan 2013.)

Capacity development in health care crises can be argued to have a technical focus and it means making resources and tools available quickly. It also includes effective communication between stakeholders and coordination of resources. Preparedness plans should include surge capacity plans, which outline the quick development of capacity as needed. Key technical features in health care surge capacity are diagnostic tools, staff, and supply chain management. (Madad et al. 2020.) Surge capacity plans specific to ARI epidemics should include (among others) consideration for the limits of health care facilities' capacities and the possible need for alternate care sites (ACSs), pharmaceutical supplies, ventilators and oxygen supply, laboratory and diagnostic capacity, IPC measures, and management of staff resources (WHO 2014).

2.4.1 Logistics and infrastructure

Effective crisis management within health care during a pandemic depends upon the access to and management of both logistics and infrastructure. Medicine and supply chain management, together with transportation, communication and logistics of health care facilities are named as crucial factors. The most important supplies are those that help prevent, detect, and treat the pandemic disease and those that secure essential non-pandemic related health care services. (WHO 2017b.) A pandemic caused by a novel ARI virus could potentially mean that large numbers of the public and of HCWs may become ill due to lack of immunity. The limits of health care facilities' capacities should be defined and plans for ACSs be made. (WHO 2014.)

According to the Institute of Medicine (IoM), PHC organizations and hospitals are responsible for coordinating their efforts to have a unified approach and common standards of care during a crisis. Standards of care are our expectations of our health care systems. During crises and in developing capacity for crisis response work, it may be necessary to make temporary changes to the standard of care normally provided. Any changes to standards of care must be made at a governmental level and be clearly communicated to the public. (IoM 2010.)

Crisis standards of care were defined in Finland on the 16th of March 2020. Non-essential services were to be postponed and urgent care was to be prioritized. Consideration for enhanc-

ing the services for vulnerable patient groups was also to be strongly considered. In developing health care capacity, the timeframe mandates explained under the legislature and primary health care setting section (2.3) were loosened. These crisis standards of care came into effect on the 18th of March 2020. (Finnish Government 2020c.) In practice, this meant that while the timeframe mandate for patients' need-for-care assessments was not waived, non-essential care provision could be postponed so long as was reasonably necessary, but only if it did not cause harm to do so (STM 2020b). Citizens were encouraged to stay home if they had symptoms and to contact their PHC providers only if they were to experience serious symptoms (THL 2020d). The need for crisis standards of care was reassessed and continued the 13th of April 2020, ultimately being in effect until the 13th of May 2020 (Prime Minister's Office 2020).

Alternate care sites

The Federal Healthcare Resilience Taskforce (FHRT 2020) of the United States, defines an ACS to be a structure that is temporarily established as a health care site to provide further health care capacity. There are three levels of ACSs. The lowest level is a non-acute care ACS, which cares for COVID-19 cases and suspect cases that are ambulatory or of minor acuity. (FHRT 2020.) Examples of COVID-19 related ACSs can be found around the world. For instance, Hotel Salud near Barcelona, Spain is a hotel converted into a non-acute care ACS especially for socially vulnerable COVID-19 patients with logistical difficulties associated with isolation (Romero Aguilar and Instituto Catalan de la Salud 2021). The digitalization of health care services has been heavily utilized too in increasing health care capacity and to minimize potential for COVID-19 exposures. A successful virtual hospital system, which could also be considered a virtual form of an ACS, was developed in southeastern USA to provide hospital level care and monitoring over telecommunication for patients that would normally be considered inpatients. (Sitammagari et al. 2021.)

According to Blazey-Martin, Barnhart, Gillis and Vazquez (2020) however, around 80% of confirmed COVID-19 cases can be managed at home without hospitalization. So, while ACSs by the FHRT definition might imply hospital level care provision, the lowest acuity ACS, which cares for COVID-19 cases and suspect cases that are ambulatory or of minor acuity, might naturally be emphasized in capacity development for the COVID-19 crisis. Therefore, emphasizing the role of PHC in crisis response work as well. The role of PHC providers in the pandemic response work, however, is less obvious in literature as most literature focus on hospital capacities. In Finland, decisions regarding the municipal health services and their role in the crisis response work are broad and unfocused as well. To the author's knowledge, ACSs by the FHRT's definition have not been needed in Finland, though COVID-19 care sites have been defined.

Laboratory and diagnostic capacity

Testing is the best way to inform risk management decisions, as decision makers have access to current transmission trends. Testing capacity for COVID-19 should consider the testing capacity needed for other health care needs, and then build upon that. Countries should have clear surge capacity plans in place for situational fluctuations in testing capacity needs. (WHO 2021b.) At the very beginning of the COVID-19 crisis, testing capacity in Finland was raised from 1700 tests per day to 5000 tests per day, with the possibility of doubling capacity from there as needed (Finnish Government 2020c). According to Ikonen, Kontio, Melin, and Savolainen-Kopra (2020) in association with the THL, Finland was able to perform and process up to 8000 COVID-19 tests nationally per day in May 2020. The STM recruited Finnish Universities to help with laboratory diagnostic work, as well as potential private and international stakeholders. Supplies for testing capacity was raised by increasing funds for ordering necessary supplies from abroad, and by recruiting national private organizations capable of producing swabs and test tubes. (STM 2020a.)

Supply chain management

The WHO (2017b) states that countries should consider the need for supplies needed in the prevention and treatment of ARIs in managing pandemic preparedness. Among these supplies are PPE, pharmaceuticals, and ventilator and oxygen supplies. Finland experienced shortages in PPE supplies at the beginning of the crisis. The National Emergency Supply Agency states that they provided the whole country with necessary PPE and ensured sufficiency of PPE by updating PPE usage guidelines and monitoring PPE usage. The agency was also responsible for securing PPE when the unavailability of PPE globally threatened to put frontline HCWs at risk. (National Emergency Supply Agency 2020.)

According to the Finnish Medicines Agency (Fimea), which is the national authority on the regulation of pharmaceuticals, pharmacies also experienced supply shortages, as people began hoarding both prescription and over-the-counter medications (Fimea 2020). The STM in turn, used the Emergency Powers Act to implement restrictions that protected the equitable distribution of momentarily limited supplies by, for instance, limiting the number of pharmaceuticals citizens could purchase (STM 2020c).

The number of ventilators and oxygen supply available has been referred to through discussion around ICU and hospital level care capacities. The STM published guidelines for surge capacity development in emergency and ICU services on the 19th of March 2020. The STM advised that ICU capacities should be lifted by 1,5-2 times the normal capacity. This was done by postponing and cancelling non-essential surgeries and training surgical nurses in respiratory ICU care. This also freed up operating rooms and recovery rooms in hospitals for potential ICU units. (Finnish Government 2020c.)

A team of ICU care experts was organized, whose sole purpose was to maintain clear national level situational awareness of ICU capacities during the crisis. The capital area of Finland had a total of 70 ICU beds before the crisis. The entirety of Finland had 259 ICU beds. These numbers do not account for beds in observation units that can be quickly adapted to ICU level care; of which there were 300. As medical equipment and supplies were not seen as a restricting factor in doubling ICU capacities, hospitals were able to raise ICU capacities according to recommendations within a month of the STM's orders. The number of COVID-19 patients in ICUs in the capital area began to rise towards the end of March 2020. During the first three weeks of April, there was consistently over 40 (<50) COVID-19 patients in the ICUs within the capital area. The increase in ICU capacity was excessively sufficient for all COVID-19 patients needing ICU care during the first epidemic wave. The ICU capacities were lowered after the first epidemic wave, but surge capacity is now just a decision away. (Finnish Government 2020c.)

2.4.2   Infection prevention and control

There have been three zoonotic diseases related to the coronavirus in the past 17 years. The first SARS was seen in China in 2002. From there it spread to 29 countries and had a final 9.6% mortality rate. The epidemic ended in 2003, after which no new cases have been seen. Middle East respiratory syndrome (MERS) was then first seen in Saudi Arabia in 2012. (Memish, Perlman, Van Kerkhove and Zumla 2020.) From there it has spread to 27 countries with a mortality rate of 35%. New cases were still seen in September of 2019, when the last situational report for MERS was published by the WHO (2019b), all of which were identified in Saudi Arabia. (WHO 2019b.) The novel coronavirus, which causes the known COVID-19 disease, was first seen in China in 2019 (Memish et al. 2020). It has since spread globally and had a mortality rate of 2,2% at the beginning of the year 2021 (WHO 2021c).

The WHO (b) has classified all three of these coronavirus diseases, among others, as priority diseases for research and development because of their risk to public health, epidemic potential, and limited or no effective treatment. Because priority diseases have limited or no effective treatments available, IPC is crucial. (WHO b.) Infection prevention and control are defined by the WHO (2014) to be a practical and essential discipline which aims at preventing infections in health care settings. It is also an important aspect in forming a coordinated response to the mitigation and control of community-acquired infections during epidemics. The IPC measures implemented depend upon the transmission mode of any given pathogen. (WHO 2014.)

The coronavirus disease, which is caused by the SARS-CoV-2 virus, spreads among people in several ways. It is classified as having droplet transmission, meaning that it can spread from an infected person through liquid respiratory particles. The size of these droplets can vary

depending on the activity of the infected person i.e., coughing or talking. An infected person does not need to be symptomatic to spread the virus. It generally spreads between people who are within one meter of each other, or in large crowds of people in a poorly ventilated area. One can also become infected by touching a contaminated surface and bringing the virus by one's hands to the mucus membranes of the face. (WHO 2021e.) However, according to the Hospital Onset COVID-19 Infection and Environmental Modelling Groups (HOCI and EMG 2021), recent evidence suggests that COVID-19 transmission could fall between droplet and airborne transmission categories, though airborne transmission would not be the primary mode of transmission. The HOCI is a subgroup of the Scientific Advisory Group for Emergencies (SAGE), established to help minimize nosocomial COVID-19 transmissions and it includes representation from four nations.

Risk management is defined by Rout and Sikdar (2017) to consist of four elements, hazard identification, risk assessment, control measures, and monitoring of control measures (referred to as the HIRAC tool, see Figure 5). Risk management decisions made on control measures utilize previously done risk assessments. This tool was used by Dehghani, Omidi, Yousefinejad and Taheri (2020) in writing about protecting workers against COVID-19 transmission risk. The HOCI and EMG (2021) define transmission risk management to be the mitigation of transmission risk to as low as reasonably possible without unintentional repercussions. A hierarchy of controls should be used to identify relevant interventions. The hierarchy of controls, depicted in Figure 5, includes elimination, substitution, engineering, and administrative controls, after which PPE is the final control measure (National Institute for Occupational Safety and Health NIOSH 2015).

The higher the hierarchy, the more effective it is in reducing transmission risk. It is important to exhaust higher control measures before resulting to increase PPE measures because many factors, such as staff behavior, affect the effectiveness of PPE. (HOCI and EMG 2021.) Areas with high and viable COVID-19 viral loads are not generally around hospitalized COVID-19 patients, but in restrooms, staff areas and public hallways of hospitals (Birgand, Peiffer-Smadja and Fournier 2020). Porters and cleaners were also seen to have the highest rate of transmission when compared to any other professional group within one hospital (Eyre et al. 2020). Studies may indirectly suggest that direct clinical exposure might not be the greatest transmission risk factor within health care settings. Hence, the importance of first considering higher hierarchies of control in transmission risk management is made evident. (HOCI and EMG 2021.)
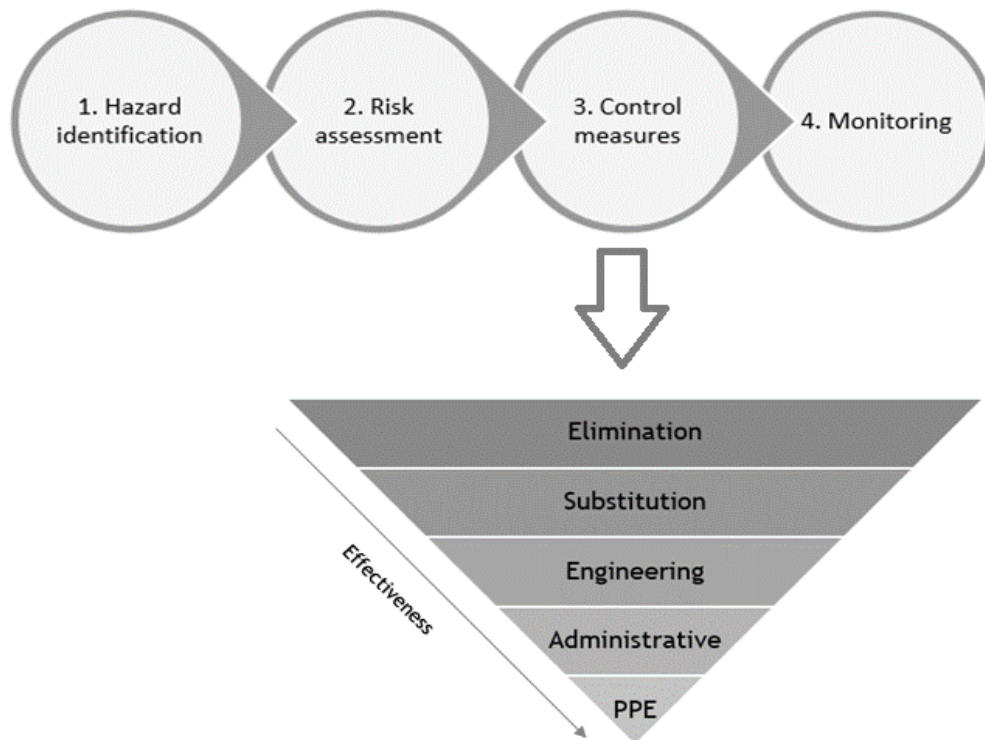
Figure 5: HIRAC tool together with the hierarchy of controls (Rout and Sikdar 2020, NIOSH 2015)

Elimination and Substitution Controls

Elimination within the hierarchy of controls means removing the risk all together. Substitution refers to replacing the risk with some other risk or hazard. As the highest hierarchy of control, elimination is the most effective in reducing risk from hazards. Therefore, reducing the risk of a present hazard by means of lower hierarchies should only be considered if elimination is not possible. (NIOSH 2015, Morris and Cannady 2019.)

During an ARI epidemic, infected persons are the main source of transmission risk within health care settings and controlling the source of the risk is crucial in IPC (WHO 2014). Elimination of COVID-19 transmission risk can be seen, for example, in the physical isolation of suspect and confirmed cases, because the source of the risk is controlled (Khan 2020). In order to eliminate the risk by isolation, the quick recognition of cases and suspect cases is key. Early recognition can instigate immediate implementation of IPC measures but requires that staff be trained to recognize epidemic related cases and suspect cases. (WHO 2014.) Patients should also be informed at the entrances of health care facilities to self-report any possible signs and symptoms of COVID-19 to aid in their immediate isolation.

Elimination controls in IPC measures can be seen too, in the implementation of telemedicine services. These services can effectively eliminate transmission risk because only patients requiring on-site evaluation and/or other health care services are seen on-site. Postponing elective and non-essential procedures can be seen as substitution to the risk of transmission and is also recommended by the WHO (2021e) to be considered as needed in terms of capacity development. Postponing health care interventions substitutes the risk of transmission with the risks involved with the postponing of the interventions. (WHO 2021e.)

Confirmed cases of COVID-19 were proactively managed, and thus isolated from the rest of health care services, by one Massachusetts hospital-based PHC center. They utilized systems in place for managing chronic conditions such as diabetes and opioid addiction to manage COVID-19 patients' care at home. This innovative approach was also designed to increase the safety of home-based care, to lessen exposure of HCWs to COVID-19, and to reduce the need for and use of valuable PPE. This method also enabled HCWs to work primarily from home as well, further eliminating the risk of exposure in the workplace. Not only did this system ensure that COVID-19 patients were not left without guidance or care, but it lessened the overall burden of COVID-19 within the PHC center and the corresponding hospital emergency department. This in turn further reduced potential exposures and saved on PPE. (Blazey-Martin et al. 2020.)

The STM published a guideline for capacity development in which the recommendation was to coordinate municipal and provincial services, so that COVID-19 patients would have their own separate line of care. In the guideline, they state that COVID-19 patients should be referred to the provincial hospitals from so called "corona centers". The aim was to isolate COVID-19 cases and suspect cases from other patients, and in other words, to eliminate the risk of transmission so far as was possible. (STM 2020d.) There are a range of terms being used in practice for care sites dedicated to caring for COVID-19 patients, such as respiratory clinics, sick clinics, and fever clinics (Telephone conversation with K, Nevala, Senior Director of Regional Operations, Unify Community Health, 31 March 2021).

These terms, however, do not accurately depict the wide range of possible COVID-19 symptoms. As the "corona centers" in Finland are being operated within already existing healthcare facilities, the term ACS is also inaccurate as such. For the purposes of this study, PHC clinics dedicated to caring for all patients with possible COVID-19 symptoms during the COVID-19 epidemic in Finland, will be referred to as COVID-19 care sites. The Finnish COVID-19 care sites care for not only patients who present with possible COVID-19 symptoms as their primary concern, but also patients who present with other concerns who have possible COVID-19 symptoms as a secondary issue (Seppänen 2020). Thus, effectively isolating confirmed and suspect cases of COVID-19 from the rest of the PHC services.

Engineering Controls

Engineering controls remove or reduce the hazard at its source. They can be highly effective, as they are not entirely reliant on HCW behavior. These control measures may initially cost more than lower hierarchies of control but over a longer period, can potentially save on over-all IPC associated costs. (NIOSH 2015.) According to the WHO (2021e), physical distance of at least one meter between people continues to be the most important IPC measure in the COVID-19 health care crisis and is listed as an engineering IPC measure. Seating within health care facilities should be arranged to comply with physical distancing recommendations. Visual signs and posters can be posted in strategic places to increase awareness of IPC measures such as physical distancing. When isolating symptomatic patients, directions for designated areas should be clear (WHO 2021e).

According to Dehghani et al. (2020), the most effective engineering controls to eliminate or reduce COVID-19 transmission risk are in improving ventilation, using high-efficiency air filters, and physical barriers. Physical barriers can be in the form of plexiglass partitions of spaces, which reduces droplet transmission risk. Optimizing air systems or utilizing portable solutions should be considered to meet ventilation and air quality standards. (Dehghani et al 2020.) The WHO (2020c) states that optimizing ventilation within health care facilities is essential in IPC, but that table-top and pedestal fans should be avoided in spaces with more than one person, as unfiltered circulating air can potentially increase the risk of exposure to COVID-19. In addition to optimizing air quality within health care facilities, defined pathways, remote triage facilities, and outdoor assessments are all suggested engineering controls. (WHO 2021e.)

Administrative Controls

Administrative controls are measures taken when hazards are not easily controlled. While they may seem cost-effective initially, they tend to be unsustainable and costly overall. They are also less effective than higher hierarchies of control and are dependent on the behaviors of HCWs. (NIOSH 2015.) Dehghani et al. (2020) define administrative measures to be those that change the way in which work is done to reduce or eliminate transmission risk. This includes organizing staff meetings over telecommunication and training staff on the appropriate IPC measures.

Leaders within health care are responsible for establishing sustainable administrative controls such as creating and communicating clear IPC policies, organizing work to comply with IPC policies, and ensuring access to testing and vaccinations when applicable. Vaccination of staff is an important IPC measure in ARI epidemics but since antibody development can take up to two weeks' time, the timely facilitation of HCW vaccination should be considered. (WHO

2014.) The first COVID-19 vaccinations began in Finland during the last week of December 2020 and frontline HCWs were the first to be vaccinated (THL 2021b, THL 2021c).

Early detection and isolation of symptomatic persons is essential to IPC during ARI epidemics, and managing ill staff is an essential part of a pandemic preparedness plan (WHO 2014, Madad et al. 2020). Syndromic surveillance of HCWs can be used as a facilitator in detecting nosocomial infections and can include mandatory temperature and respiratory symptom monitoring or self-reporting of symptoms. The process for responding to HCW exposures should be clearly defined and communicated. (FHRT 2020, Wee et al. 2020, WHO 2014.) Nosocomial infections and quarantines accentuate fear of infection among HCWs and may result in feelings of guilt, to which supervised donning and doffing of PPE can increase feelings of safety (Liu et al. 2020, Wong et al. 2020).

Personal Protective Equipment Controls

Personal protective equipment control measures are the last resort in risk management, they are also the least effective at protecting workers from hazards. Organizations may be tempted to resort to the use of PPE as a first-line defense because of its initial cost effectiveness. This is not only misleading, in that sustaining PPE control measures over an extended period can be costlier than eliminating or resolving the hazard at its source, but also can blind decision-makers to the possibility of eliminating a hazard all together. (Morris and Cannady 2019.)

Guidelines for effective and safe use of PPE were ambiguous, at best, in the beginning of the crisis. There were also significant PPE shortages in Finland. (Hahtela and Karhe 2020.) The STM (2021) states that the employer is responsible for assessing the risk for COVID-19 transmission among employees and for implementing appropriate IPC precautions and practices. Comprehensive risk assessment is important in relation to infection prevention, and this includes assessing the need for PPE, and otherwise clearly defining appropriate PPE usage. (STM 2021.) As new information about COVID-19 is made known, guidelines for IPC measures change (Xu et al. 2020).

There has been much discussion about the level of PPE needed to mitigate nosocomial COVID-19 transmissions (HOCI and EMG 2021). According to the THL (2021e), HCWs are to comply with contact and droplet IPC practices in addition to universal IPC practices when caring for confirmed and suspect cases of COVID-19. The PPE required for these measures are a surgical mask, eye protection or visor, waterproof long-sleeved surgical gown or apron, and gloves. If there are no surgical masks available, a visor which covers the face can be used on its own. If a HCW is spending longer periods of time in close contact with a patient with confirmed COVID-19 and significant respiratory symptoms, an FFP2 or FFP3 class mask is to be used. A definition for the length of time considered to be significant is not defined though. When performing aerosol-generating procedures (AGPs), HCWs are advised to wear an FFP2 or FFP3

mask, eye protection or visor, surgical cap, waterproof long-sleeved gown, and gloves. (THL 2021e.)

Aerosol-generating procedures are defined by the THL (2021e) to be suctioning of airways, nebulized therapy, bronchoscopy, intubation and extubation, non-invasive ventilation, high-flow oxygen therapy, resuscitation before intubation, autopsy, upper gastrointestinal endoscopy, and nose-mouth-ear and facial surgeries. Some ambiguity is seen in literature though, as to the definition of what procedures generate aerosols. For instance, and in contrast, the WHO (2020c) classifies AGPs as intubation, non-invasive ventilation, tracheotomy, resuscitation, manual ventilation, bronchoscopy, sputum induction with nebulized saline, dentistry, and autopsy. Whether aerosols generated by nebulized therapy or high-flow oxygen are contagious remains unclear, according to the WHO (2020c) so they are not listed under their definition of AGPs.

Aerosol-generating procedures are classified by Jackson et al. (2020) into three groups, aerosol-generating, possibly aerosol-generating, and non-aerosol-generating procedures. Procedures with a higher rate of agreement within literature to be aerosol-generating, were classified as such in the study. Procedure groups defined by the THL (2021e) to be aerosol-generating (listed above) are depicted below (Figure 6), showing the rate of agreement on aerosol-generating status within the articles they were mentioned in, within the study by Jackson et al. (2020). This figure does not show, however, the frequency with which these procedures were mentioned within all of the articles included in the study. Definitions of AGPs vary and more research is needed to reach a common consensus on the matter. The THL clearly defines AGPs, but their definition does not include a host of procedures classified by Jackson et al. (2020) to be AGPs, for instance, sputum induction.

It could be argued, that because of the nature of the COVID-19 crisis and the possible risk of aerosol transmission, the Precautionary Principle should be applied in determining appropriate IPC and PPE measures. The globally accepted definition of the Precautionary Principle was defined by the United Nations (1992) to be in relation to protecting the environment, and it states that "where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation". Pearce (2004) states that it is necessary to apply the Precautionary Principle in issues concerning public health risks as well and that in doing so, public health strategy shifts from reaction to precaution. While the Precautionary Principle may be relevant, addressing higher hierarchies of control first is not in contradiction to it, as informed decisions are made with what evidence is available. The PPE guidelines of an organization should also consider the overall availability of PPE, and direct provisions to areas of greatest need, so as not to inadvertently put HCWs in higher transmission risk areas at even higher risk due of lack of PPE supplies. (HOCI and EMG 2021.)
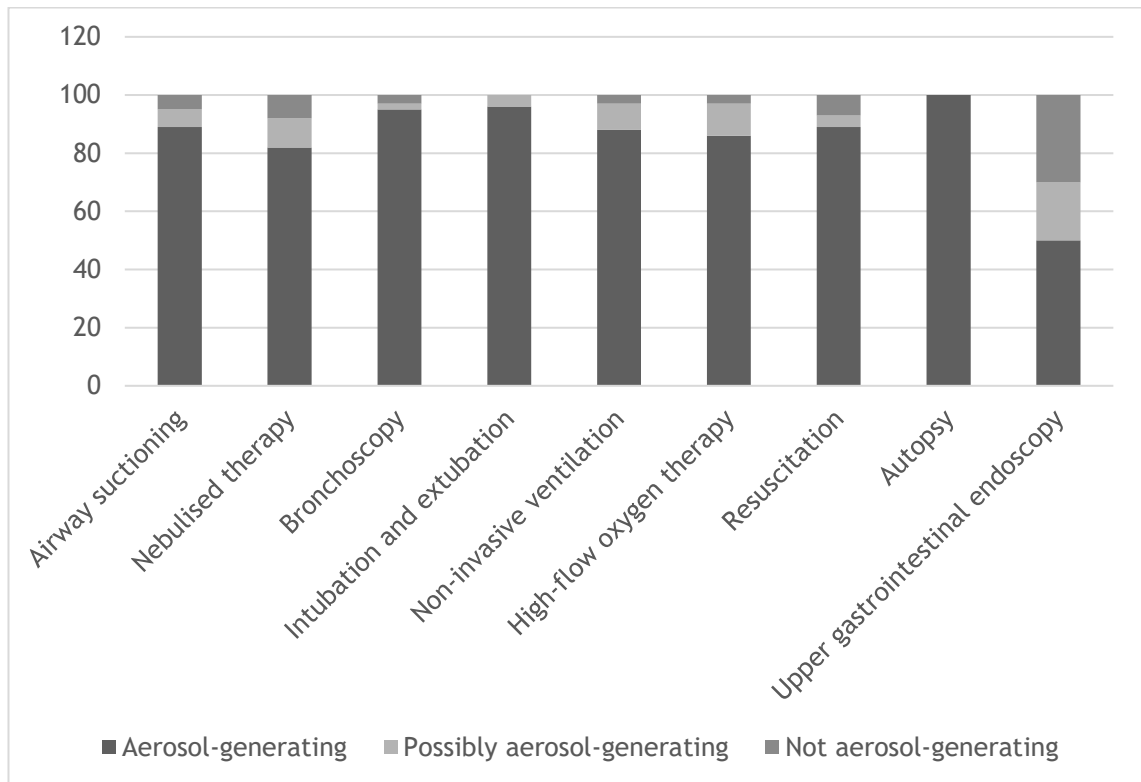
Figure 6: Agreement rate on aerosol-generating status for relevant aerosol-generating and possibly aerosol-generating procedures (Jackson et al. 2020)

The COVID-19 pandemic has increased global understanding of the holistic consequences of uncontrolled pandemics (WHO 2021d). It has also created a fantastic opportunity for increasing infection prevention awareness globally. According to Campbell (2020), there has been a reduction of overall nosocomial and community non-COVID-19 related transmissions during the COVID-19 pandemic, which could be associated with increased IPC awareness and diligence among HCWs and the public. This new understanding and awareness will hopefully help otherwise reduce the spread of disease and ultimately reduce the need for and use of antibiotics as well. (Campbell 2020.)

This comes at a critical point in global health, as the WHO (2017c) has recently identified its first-ever list of priority pathogens, or antibiotic-resistant bacteria, which threaten public health. The list includes a recommendation for increasing and standardizing IPC practices, along with better coordination of surveillance practices supporting the One Health approach (WHO 2017a). As a global community, we can use the opportunity provided by the COVID-19 crisis to help prevent infections overall, through increased awareness and standardized IPC practices, and by funding research and development in critical areas of public health risk.

2.4.3   Management of staff resources

According to Raderstorf, Barr, Ackerman, and Melnyk (2020), the COVID-19 health care crisis has only accentuated the need for effective leadership within health care. Effective leadership is also crucial in implementing changes, which the crisis has instigated plenty of (Richards 2020). Leadership in crises is different than leadership during normal operations, though the difference is related more with context than with leadership theory. Crises present situations in which leaders are confronted with new and unforeseen issues at a quick tempo, in an environment of uncertainty. (BSI 2014.)

Nurse management at a non-acute care ACS in Tennessee, USA included tasks such as, developing staffing plans and infection prevention processes, assigning nursing responsibilities according to role, and arranging for education and orientation of staff. Leadership challenges were seen as the need for quick establishment of working relationships between stakeholders not commonly working together, lack of healthcare administration experience among stakeholders, urgency, and tight timeframes. Strong nurse leadership skills in communication, holistic and relevant knowledge, and practical experience were identified as important to the successful flow of capacity development. As the risk of infection among leaders was high, clear succession plans were also made and successors received orientation in advance. (Stewart et al. 2020.)

HCWs are at high risk of COVID-19 infections, and preventative measures should be considered and enacted rigorously (Wee et al. 2020). Clear and systematic plans for what to do when HCWs fall ill are important to IPC and to the management of staff resources because ill HCWs can spread disease to other staff and patients creating a potentially larger human resource problem. Keeping a list of HCWs who have come into contact with ARI patients can make contact tracing easier. (WHO 2014.) If frontline HCWs are obligated to work, the governments shall carry the responsibility of reciprocal obligation in the face of consequences resulting from obligatory work. Frontline HCWs should be compensated fairly for their contributions to response work and have priority access to health care. (WHO 2016.)

In Finland, human resource capacity was developed, in part, by giving organizations the right to deviate from employment contract stipulations, such as weekly work hours and vacation days. This was made possible through the Emergency Powers Act through which the government also had the power to give HCWs work orders as necessary. (Finnish Government 2020c.) The need for the right to deviate from contract stipulations was reassessed and continued on the 13th of April 2020, ultimately being in effect until 13 May 2020 (Prime Minister's Office 2020).

Leadership in health care

Management and leadership are intertwined, yet different concepts. Management is a necessary authoritarian function of all organizations which defines the direction of the organization, manages resources including staff, monitors results and promotes consistency. Leadership is an inspirational relationship between leaders and followers that creates a good working environment in which staff are seen as people, not just as a resource. It also aims to inspires improvement and change. Another way to distinguish between management and leadership is to consider the challenges for which they may be best suited for. Technical challenges have ready management related solutions, for example, staff training needs. Adaptive challenges are ambiguous without clear management solutions and require innovative leadership solutions. An example of an adaptive challenge is the limited resources available for the management of the COVID-19 health care crisis. (Richards 2020.) Capacity, as earlier defined, can also be seen from both of technical and human-focused perspectives, which together make up operational capacity (Morgan 2013). Management can be seen as technical focused capacity development and leadership as human focused.

Leadership in health care is increasingly important. According to Kumar and Khiljee (2015), there are six distinct leadership theories, Great Man, Trait, Behavioral, Contingency, Transactional and Transformational. The Great Man theory suggests that leaders are born leaders with characteristics such as charisma, while similarly, the Trait theory states that some are simply better suited for leadership because of personal qualities like assertiveness. The Behavioral theory suggests that the behaviour of leaders is more relevant that traits, and that certain behaviours are associated with success. The Contingency theory then, suggests that good leaders adapt their approach to the situation and to the needs and characteristics of their subordinates. Transactional leadership depicts an approach which achieves motivation through transactions, such as rewards and punishments, and transformational leadership is a method in which leaders inspire motivation through vision and enthusiasm. (Kumar and Khiljee 2015.)

Transactional leadership in nursing is an effective leadership style for crisis management because it clearly defines roles and expectations, which provides certainty in uncertainty. In order to implement effective transactional leadership strategies, it is important to ensure that tasks and expected standards are clearly defined and communicated, as well as the corresponding rewards and penalties. On its own, however, transactional leadership it is an approach that can arguably result in non-holistic patient care. (Richards 2020.) Transformational leadership is a style that best corresponds to leadership needs in nursing, though transactional elements can enhance its effectiveness (Vesterinen, Suhonen, Isola and Paasivaara 2012).

Two commonly referred to health care leadership models discussed by Kumar and Khiljee (2015) are the Five Best Practices defined by Kouzes and Posner (2009) and the National Health Services' (NHS) Leadership Academy's Healthcare Leadership Model (see Figure 7). The

most significant differences between the NHS Leadership Academy's (2013) model and Kouzes and Posner's (2009) best practices, are the dimensions which are specific to health care, evaluating information and connecting our service. Evaluating information refers to leading a team which values and utilizes evidence-based information in decision-making and practice. Connecting our services is in reference to understanding how the setting in which one works, is connected to the rest of the health care system. Leadership behaviour can be evaluated on a four-point scale from essential to exemplary using the nine dimensions of the Healthcare Leadership Model. (NHS Leadership Academy 2013.) It is essential for nurse leaders to practice self-assessment as their roles and work environments change, for which the Healthcare Leadership Model assessment tools are suitable (Nightingale 2020).

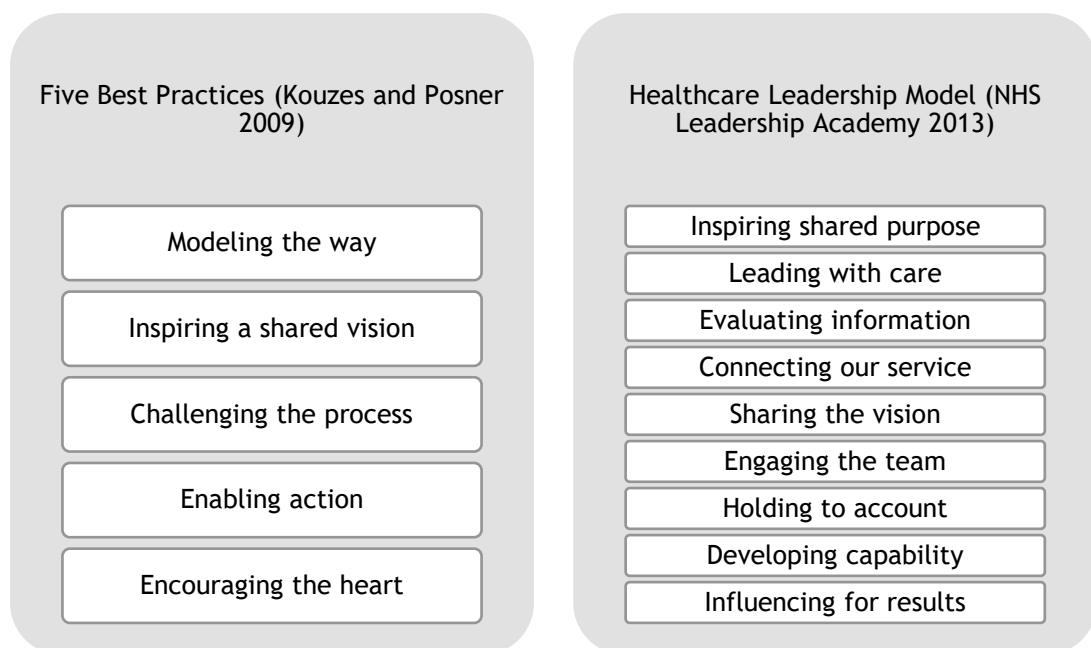| Five Best Practices (Kouzes and Posner 2009)	Healthcare Leadership Model (NHS Leadership Academy 2013)
Modeling the way	Inspiring shared purpose
Inspiring a shared vision	Leading with care
Challenging the process	Evaluating information
Enabling action	Connecting our service
Encouraging the heart	Sharing the vision
	Engaging the team
	Holding to account
	Developing capability
	Influencing for results

Figure 7: Leadership models (Kouzes and Posner 2009, NHS Leadership Academy 2013)

The effectiveness of leadership within nursing is dependent upon the nurse manager's ability to utilize different leadership styles. Nurse managers' leadership styles in Finland were described by nurses and their supervisors to include six distinct methods: visionary, coaching, affiliate, democratic, commanding and isolating. The applied leadership method was seen to impact a wide host of topics including nurses' job satisfaction and commitment, efficiency, and economy. The quality of relationships within and without an organization was seen as a direct reflection too of its nurse manager's ability to promote cooperation between stakeholders. This affected quality and continuity of patient care and patient experiences. (Vesterinen et al. 2012.) According to Saleh et al. (2018), the leadership methods adopted by nurse managers within multicultural work environments in a Saudi Arabian referral centre also impacted job satisfaction of nurses, staff retention, and the quality of care provided to pa-

tients. Ineffective leadership within health care can compromise patient safety (Nightingale 2020).

Raderstorf et al. (2020) developed a guideline for leaders to use to empower their HCWs during frontline crisis response work. The guideline includes eight principles: communicate frequently, slow down, increase clarity, maximize your presence, practice empathy, enable the sharing of innovative ideas, utilize evidence but innovate when necessary, and take care of the health and wellbeing of both leaders and staff. As the nursing profession requires the translation of theoretical knowledge into practice, the Novation Dynamic practice is suggested for innovative leadership during the COVID-19 crisis. (Raderstorf et al 2020.) The Novation Dynamic framework is concerned with both the noun and verb forms of innovation, which means that innovation should happen both at the level of what is done and how it is done. It includes three dimensions of innovation, renovation, and exnovation. Innovation is defined as something entirely new which adds value to a gap, or what is needed. Renovation is making improvements to an already existing service or process in response to a gap. Exnovation is the purposeful process of removing something from practice which is no longer needed or no longer adds value. The three dimensions are intertwined and all three should be actively considered in the process of innovation. (Ackerman, Giuliano, and Malloch 2020.)

Motivation of health care workers

Working with COVID-19 patients and suspect cases is a risk factor for increased anxiety, and measures to lessen the burden of COVID-19 work on HCWs should also be implemented early (Liu et al. 2020). According to García-Fernández et al. (2020), nurses scored highest (when compared to other personnel) for anxiety, depression and acute stress related to COVID-19 response work during the first epidemic wave in Spain. This was considered to be because of insufficient PPE and information. (García-Fernández et al. 2020.) Both the President and the Director of Development of the Finnish Nurses' Union addressed the STM concerning the fears of Finnish nurses at the beginning of the epidemic, specifically in relation to the shortages in PPE and ambiguous PPE guidelines. In the address, they insisted that the government communicate clearly about PPE and in such a way, that there would be no room for misunderstanding by individual employers. They made it clear that the uncertainty that reined at that time, will come to affect nurses' motivation to work in the long run. (Hahtela and Karhe 2020.)

Devnani (2012) wrote that effective crisis response work during an influenza public health emergency, depends upon HCWs reporting to work despite the risks involved. Understanding what motivates HCWs to work during public health emergencies is an important aspect of preparedness. Table 1 illustrates possible facilitators and barriers associated with willingness to work during an epidemic. (Devnani 2012.)

Barriers	Facilitators
Concern of potential risk to family, personal health concerns, fear of infection	Full-time employment, longer employment history, flexible hours, financial bonus, life/disability insurance, confidence in employer, employer accepts responsibility of mistakes made
Pregnancy in the family, responsibilities for caring for one's family, personal obligations (primary caregivers, parents)	Education and training on the topic, previous experience with public health emergencies, knowledge of pandemic plan and role specific responsibilities, perceived value of one's role in the response effort, belief in duty to work
Peak of the epidemic, progression of the epidemic, required direct contact with ill patients, job obligation	Early phase of the epidemic, availability of PPE to use at work and outside of work
	No underage children at home, preferential access to treatment and prevention for HCWs and their family members

Table 1: Barriers and facilitators of willingness to work during a public health crisis (Devnani 2012)

According to Maslow (1943), motivation is a complex phenomenon though and defined as only one aspect of behavioral determinants, as behavior can also be determined by biology, culture, and/or situations. He suggests that human potential is underestimated and the answer to motivation lies within a hierarchy of needs (see Figure 8). Lower tier needs are met before proceeding to higher tier needs. So long as one lower tier need is not sufficiently met, higher tier needs are forgotten or denied. Sometimes, lower tier needs can be activated as channels for higher tier needs, for example, eating for comfort. This can happen in the opposite direction as well, for example, smoking in place of eating. Needs do not need to be entirely satisfied to shift the focus of motivation, as most people have only partially satisfied basic needs. (Maslow 1943.)

Self-actualization
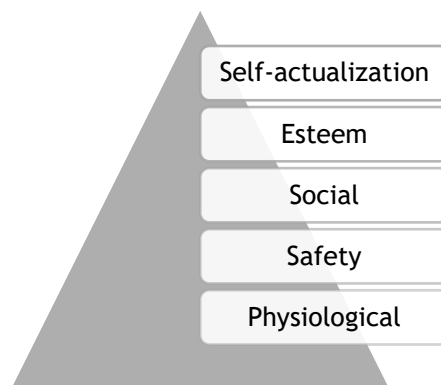
Esteem

Social

Safety

Physiological

Figure 8: Maslow's hierarchy of needs (Maslow 1998)

According to Wong, Pacella-LaBarbara, Ray, Ranney and Chang (2020), HCWs at the frontline of COVID-19 response work are susceptible to unprecedented physical and psychological stress related to their work. This may trigger posttraumatic stress disorders (PTSD) in some, while on the other hand, some may experience posttraumatic growth instead. In a questionnaire conducted by the Finnish Nurses' Union (2020) in October of 2020, over half of Finnish nurses are considering leaving the profession. Before the pandemic began, 73% of respondents did not consider themselves to be burned out. Around 40% of the respondents claimed to be burned out in the summer of 2020 though, while another 40% responded by saying that they feel burned out on occasion. Respondents stated that they needed their managers to listen to them and to provide a platform for communication by being available. Managers in turn, wanted to be entrusted with more decision-making responsibilities that concerned their area of expertise. (Finnish Nurses' Union 2020.) In protecting the mental health of COVID-19 front-line workers, Wong et al. (2020) suggest taking Maslow's hierarchy of needs as a framework for addressing mental health as a holistic matter (see Table 2).

Maslow's hierarchy level	As related to COVID-19 work	Suggested interventions
Level 1- physiological needs	Physical burden of PPE, logistics of isolation or quarantine periods, irregularities in sleep patterns, COVID-19 symptoms	**Individual-** personal hygiene, sufficient breaks from work with refreshments, personal and holistic health, and fitness **Administrative-** accommodating for isolation through provision of space and services, providing refreshments for staff, ergonomic work schedules, testing and treatment of COVID-19 readily available, recognition and treatment of mental health symptoms
Level 2- safety needs	Fear related to infection and insufficient PPE, potential long-lasting consequences of COVID-19 resulting in fear for financial security	**Individual-** supervised dressing and undressing of PPE, peer support. **Administrative-** Ensure sufficient PPE through alternative strategies, clear and consistent communication, including healthcare workers in the discussion concerning risk analysis and strategies, ensuring job and financial security
Level 3- Social needs	Social distancing practices related to COVID-19, fear of exposing loved ones leading to isolation from loved ones	**Individual-** Peer support, virtual social support **Administrative-** Acknowledge healthcare workers' concerns, collaborative teams, virtual support networks, mental health check-ins, provide resources for the loved ones of HCWs to help them better support HCWs
Level 4- Esteem	Being a constant resource of COVID-19 knowledge for non-medical social contacts,	**Individual-** Focus on real threats, define personal values and incorporate them in action, use concerns as a basis for developing one's profession.

	ethical challenges	
		Administrative- Facilitate ethics teams for consultation, utilize the patient-centered approach, recognize, and celebrate the contributions of staff, value-based policies
Level 5- self- actualization	Conflict between the greater good and individual patients	**Individual-** Focus on what one can control or influence and accept the rest, join movements for change that are productive. **Administrative-** Information sharing, peer mentoring, creating opportunities for developing response work

Table 2: Maslow's hierarchy of needs and the mental health of COVID-19 HCWs (Wong et al. 2020)

Many nursing platforms are concerned for the wellbeing and motivation of nurses globally in relation to COVID-19 and beyond. The International Council of Nurses (ICN 2021) predicts that a mass migration of nurses from the field of nursing will occur as a COVID effect. The COVID effect suggests that mass trauma has been experienced by nurses working during the COVID-19 crisis and that the trauma will have lasting effects on nurse retention in the long run (ICN 2021). The Japanese Nursing Association (2021) conducted a survey to assess the actual status of nurses in relation to COVID-19 work. They found that 15,4% of hospitals reported some nurses quitting their jobs and 49.4% of hospitals reported changes to nurses' work attendance because of COVID-19 related reasons (Japanese Nursing Association 2021).

Devnani (2012) lists financial bonuses to be a facilitating factor in HCWs' motivation to report to work during an epidemic. Transactional leadership methods are also suggested by Richards (2020) as an effective crisis management strategy. Many EU member states have paid their COVID-19 workers bonuses ranging from 500-1500 euros of tax-free income. Finland has yet to pay their COVID-19 workers financial bonuses. (Koivuniemi 2020.) The Finnish Nurses' Union (2020) insists that it is imperative that policy makers better listen to and support nurses, along with their managers, in considering capacity development for future epidemic waves.

2.5   Ethical considerations related to COVID-19 crisis response work

The Universal Declaration of Human Rights (United Nations 1948), states that everyone is entitled to a standard of living which is adequate for enjoying the highest attainable standard of both mental and physical health and wellbeing. Primary health care is based on this basic human right and addresses social justice, equity, and participation within local communities. Governments are responsible for providing access to essential health care services and adopting policies which promote the health of their populations. (WHO and UNICEF 2018). The WHO (2016) states that governments also have an ethical obligation to uphold functioning health systems that can respond to crises and provide potentially long-term capacity to crisis re-

sponse work. Relevant ethical principles in infectious disease outbreaks are defined as justice, beneficence, utility, respect for persons, liberty, reciprocity, and solidarity. (WHO 2016.)

Ethics rarely define clear universal policies, as ethical considerations are largely affected by context. These concerns include the need for considering the ethics of social distancing, isolation and quarantine, and obligatory vaccination practices. Any restrictions enforced upon the rights of individuals must be deemed necessary, equitable, and reasonable, and to be in accordance with both national and international laws. (WHO 2017b). Relevant societal values such as autonomy, equality, openness, and solidarity are being tested. Decisions must be justified, even with the uncertainty surrounding them. Actions taken in the name of containment and mitigation allow for preparation, which increases the probability of effective crisis response work in relation to the COVID-19 health care crisis. (Häyry 2020.)

The STM (2020e) stated on the 3rd of April 2020, that everyone will be equally afforded the assistance and health care that they need during the COVID-19 crisis, highlighting that disabilities and other vulnerabilities will not be used against anyone when determining need for care. However, according to Rissanen, Parhiala, Kestilä, Härmä, Honkatukia and Jormanainen (2020), the most vulnerable populations have carried the burden of the COVID-19 standards of care. The extent of social and health care services narrowed, and services have been digitalized. Digital services require reliable internet connection, computer skills, and an online bank account for patient identification. These, together with patients' fear of COVID-19, means that many services requiring contact have not been provided. The THL is worried that the burden of non-communicable diseases will increase as a result. These factors may also increase and accentuate health care inequities. (Rissanen et al. 2020.) Effective crisis response work takes chronic health conditions into account because their status is likely to decline, due to the prioritization of other health services. (Häyry 2020.) In this light, capacity development which has considered the limits of health care systems by enacting crisis standards of care have developed capacity quickly and superficially. This has led to the displacement of the burden of the limits of health care facilities.

During the 2009 (H1N1) influenza A pandemic, effective communication with the public was challenging. This in turn emphasized the importance of effective communication with the public and the health literacy of populations in pandemic management. (WHO 2017b.) Health literacy is originally defined by the WHO's (1998) Health Promotion Glossary as the motivation and ability of individuals to access, understand and use health information to promote their own health and the health of their communities by making behavioral changes. Widespread misinformation during the COVID-19 pandemic has been labeled an 'infodemic' by the WHO (a) as it can adversely affect the health of populations. The WHO (2021a) has published a list

of common myths surrounding COVID-19 with the facts associated with each one, ranging from topics such as 5G mobile networks to houseflies.

According to Sturgill (2021), physicians are in a key role to combat COVID-19 misinformation, as patients seek their expertise and advice concerning individual health care needs. Nurses play a key role in the dispelling of rumors during crises as well, as they are trained to explain factual information in a holistic manner, and in such a way as to be understood by the public (Edmonson, Sumagaysay, Cueman, Chappell 2016). As the ICN's (2012) four pillars of nursing are to promote and restore health, prevent illness, and alleviate suffering, combating misinformation during the COVID-19 pandemic would seem to be a relevant concern for nursing. Evidence-based information is valued in nursing research and professional practice, however, how nurses portray their knowledge in public is not addressed in the recently updated ethical guidelines of the Finnish Nurses' Union (2021), nor in the ICN's (2012) ethical guideline for nurses. According to the ethical guidelines of the Finnish Medical Association (2014) though, physicians are accountable for presenting evidence-based information when in the public eye. In the age of 'infodemics,' would it be ethically appropriate to hold all health care professionals, including nurses, accountable for how they present their knowledge and profession to the public?

Further important values associated within COVID-19 and nursing are defined by the American Nurses Association (ANA 2020a) to be the utilization of evidence in decision-making, trust, transparency, and honesty in communication. According to the ANA (2020b), nurses have experienced ethical distress in relation to COVID-19 work. Examples of ethical dilemmas, among many, are due to insufficient resources, lack of evidence-base in decision-making, insufficient PPE, obligation to work, insufficient training, work/life imbalance, illness and death, and witnessing health inequities. The association published a code of ethics for nurses working during the COVID-19 crisis. They seek to remind nurses that sustainable nursing practice includes an equal responsibility to care for oneself as well. The profession does not require heroic action of nurses, nor should any nurse feel the need to prove their value through putting themselves at great personal risk. (ANA 2020b.) The Finnish Nurses' Union has not published an ethical guideline for Finnish nurses concerning COVID-19 work, though they have updated the nurses' ethical guidelines at the beginning of the year 2021.

3   Purpose Statement and research question

The purpose of this study is to describe the early experiences of nurse managers of primary health care clinics in the greater Helsinki area dedicated to caring for patients with possible COVID-19 symptoms during the Finnish COVID-19 epidemic. The objectives are to make their

COVID-19 crisis response contributions known and to provide an in-action-review (IAR) of Finnish primary health care COVID-19 crisis response efforts.

The research question is:

What were the early experiences of nurse managers of primary health care clinics dedicated to caring for patients with possible COVID-19 symptoms?

4   Methods

The WHO (2019a) defines after-action reviews (AAR) to be essential to learning and improving public health response. It is important to reflect and evaluate upon all actions taken during a public health event and an AAR is an essential part of the International Health Regulations (2005) (IHR 2018) Monitoring and Evaluation Framework (MEF). The IHR (2018) was first intended to address only six diseases but was later revised to include any potential public health event of international concern (PHEIC). The MEF (see Table 3) includes four components, shown below. The only obligatory component is the annual self-assessment report. (IHR 2018.)

Annual self-assessment report	After action reviews (AAR)	Simulation exercises	External evaluations
The purpose of an annual self-assessment report is to monitor the progress in implementing IHR capacities.	The purpose of an AAR is to evaluate the use of capacities during real events.	The purpose of simulation exercises is to evaluate the use of capacities in simulated events.	The purpose of an external evaluation is to gain an objective analysis of existing capacities

Table 3: Monitoring and Evaluation Framework simplified (IHR 2018)

An AAR is a qualitative review of response efforts, which is done no more than 3 months after a public health event. The aim of an AAR is to define best practices, and to point out gaps and lessons learned in order to improve preparedness plans and capabilities for future events. After action reviews include recovery work. They can focus on specific areas of response efforts or the entire response to an event. (IHR 2018.)

The European Center for Disease prevention and Control (ECDC 2020) coined the term In-Action Review (IAR) in response to the longevity of the COVID-19 health care crisis. The ECDC (2020) suggests that IARs of response work be done to possibly improve future outcomes of current efforts. In-Action Reviews aim at quickly addressing mostly the "what" of the current response. An IAR seeks to identify what is happening, what is on the horizon, what we have learned, and what would be good to change in the current response work. Studies conducted

during the response should require minimal resources in the form of time commitment of staff involved in response efforts.

The WHO (2020d) states that there is value too in sharing research and knowledge concerning benefits and costs of strategies in different contexts. For the purposes of this study, the ECDC's (2020) IAR guidelines are used. This is a qualitative study. The data were collected through thematic pair interviews of key informants using telecommunication. The data were analyzed and coded inductively using thematic analysis.

4.1   Data collection

An interviewer's goal is to convey the thoughts, perceptions, experiences, and feelings of the respondents on a given topic (Hirsjärvi and Hurme 2008). As the purpose of this study was to describe the early nurse management experiences in PHC clinics in the greater Helsinki area dedicated to caring for patients with possible COVID-19 symptoms during the COVID-19 epidemic, an interview as a method of data collection seemed appropriate.

A thematic interviewing style was chosen and is defined by Hirsjärvi and Hurme (2008), to be conversation over predefined themes. This style does not strive for a common experience among respondents but allows for individual expression of experiences. Instead of specific questions, the interview proceeds with themes, under which are example questions that can be used to prompt conversation. This method of interviewing frees the interview of the author's possible biases and accentuates the voices of the respondents. (Hirsjärvi and Hurme 2008.)

According to Hirsjärvi and Hurme (2008), piloting the interview is essential in thematic interviewing. This is done to assess the framework, order the themes appropriately and test the time frame of the interview. Unfortunately, because the target group for this study is so specific and given the context of IARs requiring limited use of staff resources, this interview was not piloted. However, the author trusted in the flexibility of thematic interviewing and in the motivation of respondents to communicate their experiences.

4.1.1   Generating interview themes

The most important part of thematic interviewing is in defining the themes by which the interview is structured. Themes used for thematic interviews are defined by literature. Under each theme, are possible questions that can be asked to stimulate conversation. These questions are not meant to be used in a structured interview pattern, they are only tools at the disposal of the interviewer, should the respondents need further prompting. It is also important to decide whether the aim is to collect subjective or objective data. Subjective data would lead to thick descriptions, while objective data leads to thin descriptions of facts.

(Hirsjärvi and Hurme 2008.) For the purposes of this study, the aim was to collect subjective data related to the early nurse management experiences.

In generating the themes for this interview, a semi-structured literature search was conducted on the topic, and themes were extracted through a semi-formal thematic analysis. References for the topic were searched for with the help of information retrieval guidance services provided by the university library. Notes were taken while reading the literature. The notes were then first categorized into background information and potential interview topics. Potential interview topic notes were then coded and categorized into themes. Table 4 shows a few examples of this process.

Original statement	Code	Theme
Effective response depends on uninfected personnel reporting to work despite risks (Devnani 2012).	Motivation of staff	Managing staff
Nurses scored higher than other professions for anxiety, depression, and acute stress (García-Fernández et al. 2020).	Mental health of staff	Managing staff
Resources and tools need to be made immediately available (Madad et al. 2020).	Surge capacity	Capacity development
Testing capacity was raised from 1700 tests/day to 5000 tests/day, and it is possible to double that yet (Finnish Government 2020c)	Testing capacity	Capacity development
The possible consequence of a slowed or stopped epidemic in this case is the possible lengthening of the epidemic and an elevated risk of a new large epidemic wave in the fall (Finnish Government 2020c).	Long epidemic situation, elevated risk of large epidemic wave	Emerging issues
Large amount of SARS and MERS cases were infected in health care settings (Wang et al. 2020).	Nosocomial outbreaks	Infection Prevention
Identify the main challenges to response work (ECDC 2020).	Main challenges	Overall experiences

Table 4: Generating interview themes

The themes for the interviews were five, capacity development, management of staff, infection prevention, emerging issues, and overall experiences. Questions listed under the themes were not binding. These questions were tools which were at the disposal of the author during the interview. Their purpose was to instigate discussion on the themes, on an as needed basis. Questions were derived from the codes under the interview themes. As IARs aim at addressing mostly the "what" of the current response, the questions are mostly phrased in this format. The framework for the interviews can be found under Appendix 5.

4.1.2 Respondent recruitment

Respondents are selected to be interviewed because they represent a certain target group, and the target group is defined by the purpose of the study (Hirsjärvi and Hurme 2008). Kvale (1996) then states that focusing on a few cases allows for in-depth detail on the context of the data and that if the purpose of the study is to gain general knowledge on a topic, a few intense case studies are enough. For the purposes of this study, the four respondents outlined below would appear to be significant. To include further respondents from outside of the capital area would mean a diluted contextual base for the results.

The scope of this study is defined as the early nurse management experiences in COVID-19 care sites in the capital area of Finland. "Early" is defined by the time between the activation of the emergency powers act and the last conducted interview (16/03/2020-02/02/2021). There are three separate municipalities included in the capital area: Espoo, Helsinki, and Vantaa. Espoo and Vantaa each have one COVID-19 care site, while Helsinki has two. In identifying the most appropriate stakeholders to gaining perspective on the management of COVID-19 care sites in Finland, the four COVID-19 care sites of the capital area have been identified as the most relevant sources of information. A clear purposive strategy for respondent recruitment was used. The nurse managers of the four COVID-19 care sites in the greater Helsinki area were asked to participate in the study. Each selected respondent had been working as the nurse manager of their PHC clinics from the beginning of the crisis until the time of the interviews.

Hirsjärvi and Hurme (2008) state that respondents may be contacted directly by the interviewer using various methods. The names and email addresses of the nurse managers of PHC clinics were listed on municipal websites, through which the author was able to gain the contact information for possible respondents. Selected respondents were initially contacted directly by the author by email (see Appendix 1 and 2) to which the informed consent letter (see Appendix 3 and 4) was attached to for further information. The author explained the study and asked about their interest to participate. For any further contact related to the study, correspondence between the author and willing participants happened through email and by phone. One city required a third party to be involved in respondent recruitment and in

this case, the regional nurse manager was contacted. She however, directed the author to be directly in contact with the respondents. Therefore, the recruitment of and communication with all participants was the same throughout.

According to the European Parliament's and the Council of the European Union's (2016) general data protection regulations (GDPR), the subject can give voluntary and informed consent for defined data processing. Respondents were informed of the details of the study and were aware that participation was voluntary. Respondents were made aware of the contents of the data and the extent of their contribution to the results through collaboration and the validation of results. Direct quotations used required separate approval from each of the respondents. The details of these communications are outlined in the initial email and informed consent paperwork found in appendices 1-4. The version used with the respondents was naturally the Finnish version.

Participation was voluntary throughout the duration of the study. All three cities gave their approval for the study and all four nurse managers participated in the study. Two copies of the informed consent letter (appendix 3 and 4) were mailed to the interested respondents, with an attached prepaid and addressed envelope for returning a signed copy to the author. The first interview date was scheduled immediately after the author received signed copies of the informed consent letters from two respondents. The second interview date was also scheduled as soon as the final copies of the informed consent letters were received by the author.

4.1.3 Thematic interviews

The data were collected using thematic pair interviews. Pair interviewing is a form of group interviewing. Benefits of group interviewing include spontaneous commenting and that new observations can be made by respondents during the interview. Group interviewing further reduces the role of the interviewer. The role of the interviewer is to get the conversation started and flowing, while following the general framework of predefined themes. (Hirsjärvi and Hurme 2008.) Kvale (1996) states that a good interviewer has empathetic access to the world of the respondents. Holistic contextual knowledge can also aid in the interviewing process as aspects of given information can be followed up on by the interviewer spontaneously.

In the beginning of the interview, the author introduced herself to the respondents. This introduction included background on language skills and information on work history concerning the connection between the author and two of the respondents. In this way, the author ensured that all respondents were aware of the possible differences between the author and individual respondents. This was done also with the idea of forming a trusting relationship with respondents, and in securing insider status for the author with the respondents with whom she did not have a prior relationship.

Giving each respondent a chance to voice their thoughts was not seen by the author to be problematic in the pair interview setting. To better triangulate the data, the two managers from the City of Helsinki were paired with managers from either Espoo or Vantaa. The cities made it clear, that any research conducted during the COVID-19 crisis, must not require too much time or effort from the staff. The interviews were conducted in pairs, because any larger groups could have limited the participation of respondents during the interview and would have required more time from each individual respondent. The two interviews took place via telecommunication channels of Skype and Teams.

The interviews were recorded by the author for the purpose of analyzing the collected data, as recordings make natural conversations about a given topic possible (Hirsjärvi and Hurme 2008). The GDPR defines personal data to be all information directly related to an individual, or to an individual who can be identified through the context of the data. The processing thereof, means an action taken using personal data, whether automated or not. Personal data should be managed and processed legally and ethically. Relevant data is collected and used only for a clearly defined purpose. Inaccurate data should be destroyed. Data in the form in which data subjects can be identified, can be stored as such for only the length of time that is defined to be necessary. All data should be processed in such a way that security is considered at every turn. The controller of the data is responsible for ensuring that the data is managed appropriately. (European Parliament and the Council of the European Union 2016.)

The first interview was conducted on the 10th of November 2020, and the second was conducted on the 2nd of February 2021 (refer to Figure 9 for the timeline of the study). The interviews were 56 minutes and 35 seconds, and 61 minutes and 55 seconds long respectively. The recordings were downloaded and saved on the author's personal computer, which is password protected and only kept at the residence of the author. Nobody but the author had access to the original data from the interviews. After the study has been published, the original data from the interviews (recordings, transcriptions) will be destroyed. Each respondent gave their informed consent to the collecting, using, and storing of the interview data.

05/2020: The study plan was approved by the University. Initial contact was made with the respondents and study approval was applied for from the cities.

↓

06/2020: The city of Espoo approved the study

↓

08/2020: The city of Vantaa approved the study

↓

10/2020: The City of Helsinki approved study

↓

10/11/2020: The first interview is conducted

↓

02/02/2021: The second interview is conducted

↓

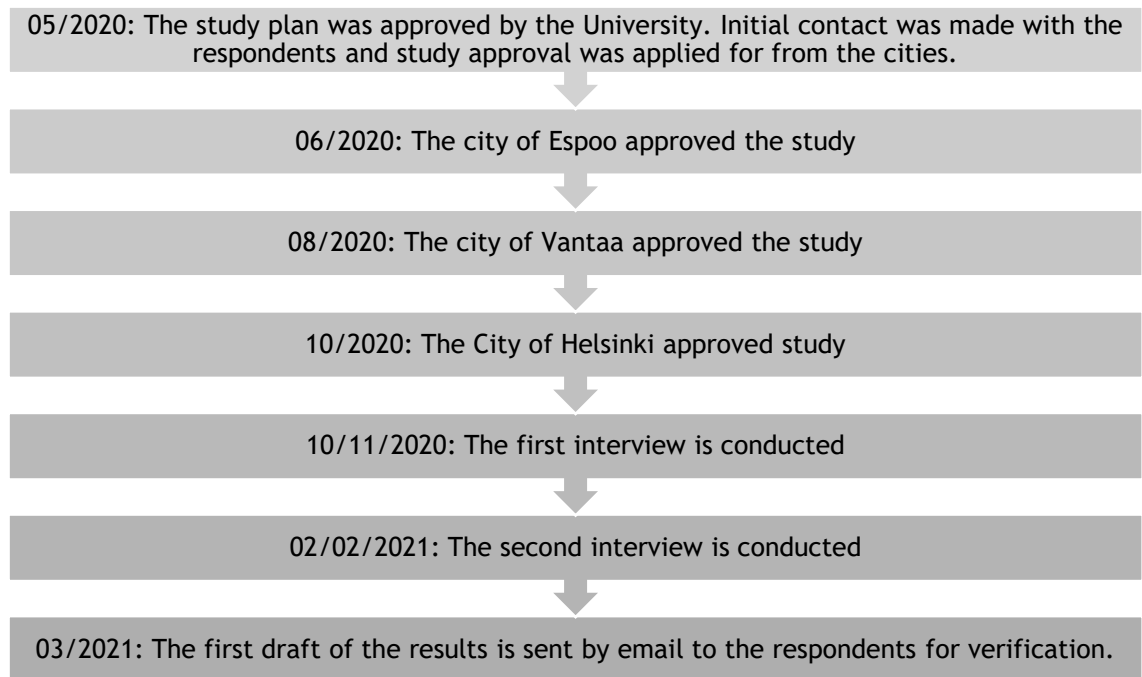| 03/2021: The first draft of the results is sent by email to the respondents for verification. |
| :---: |

Figure 9: Timeline of the study

Role of the interviewer

There are different methods to asking questions or participating in the interview as an interviewer in thematic interviewing. The first are open and broad questions, which are good questions to start the conversation with or to introduce a theme. Then there may be instances in which the interviewer is asked to define terms or concepts. It is important to have these concepts predefined and the same for all interviews. Next, an interviewer can also refresh the memory of a respondent by feeding back relevant information the respondent has given beforehand. The interviewer can also summarize the given information to help with coding later, but this should be kept to a minimum to prevent adding the interviewer's own perspectives. The interviewer can also repeat the respondents' answers if needed. Finally, there are clarifying or further questions, which are used in instances where the information is unclear, or the interviewer wants more detail about a given topic. (Hirsjärvi and Hurme 2008.) Table 5 has each question used by the interviewer listed for the first theme of the interview, capacity development. The rest of the table can be found under Appendix 6.

First interview	Open and broad questions asked	The first theme was introduced broadly by saying "Let's begin with talking about capacity development. What does capacity development mean to you as nurse managers of COVID-19 care sites?"
	Definitions given	Capacity was defined in part by confirming one respondent's idea of capacity development, which was to increase production and recruit more staff. The author added to that by saying that capacity development was also the coordination of these resources.

	Clarifying questions asked	I would like to ask about when you said you had six doctor/nurse pairs, because I know that normally there are more than 6 doctors there, so has something changed?
		What common practices needed to be defined?
		One question for B on the topic of nurses' independent work; earlier you mentioned that patients are categorized using ISBAR, are the patients that are delegated to nurses then defined as suitable cases for nurses by their ISBAR category?
		A, when you said that the number of patients for the walk-in service fluctuates from 10-34 per day, how do you manage with the larger numbers?
		How long have the waiting times been then?
		And walk-in patients come from where?
		What about B, how long have your waiting times been?
	Direct questions asked	What resources were needed? (Question 5 from Interview framework)
		What is the surge capacity development plan? (Question 2 from interview framework)
Second interview	Open and broad questions asked	First theme was introduced by saying "let's begin with the first theme, which is capacity development. What thoughts come to mind concerning capacity development? How did it all begin? What happened in the beginning?"
	Definitions given	Capacity was defined as the capacity needed to develop the new services surrounding the COVID-19 care site.
	Clarifying questions asked	You had all 23 doctors and then your nurses participating in the work?
		How many nurses did you then have in the end?
		Did you have to return to work early from your vacation?
		So D, you had said that you had rearranged and cleaned the rooms in your clinic. Was that like the process that C just described?
		Has C's clinic provided similar evening services?
		If you are discussing plans to reopen your normal clinical services in a separate wing or floor, where have your patients been cared for up until this point?
	Direct questions asked	What is the surge capacity development plan? (Question 2 from interview framework)

Table 5: Questions used in both interviews during discussion over the first theme

4.2   Data Analysis

Thematic analysis is a qualitative research analysis method. It is often used in analyzing large amounts of data and/or within research teams. It can be used to identify analyze, organize, describe, and report themes within data. Thematic analysis done correctly can give trustworthy results. Nowell, Norris, White and Moules (2017) describe the thematic analysis process in six steps (see Figure 10). Although the process is described as linear, they explain that it is more fluid and reflective. Trustworthiness must be considered throughout the process and is the researcher's responsibility. (Nowell et al. 2017.) This section includes phases 1-5. Phase 6 is in the results section of this study.
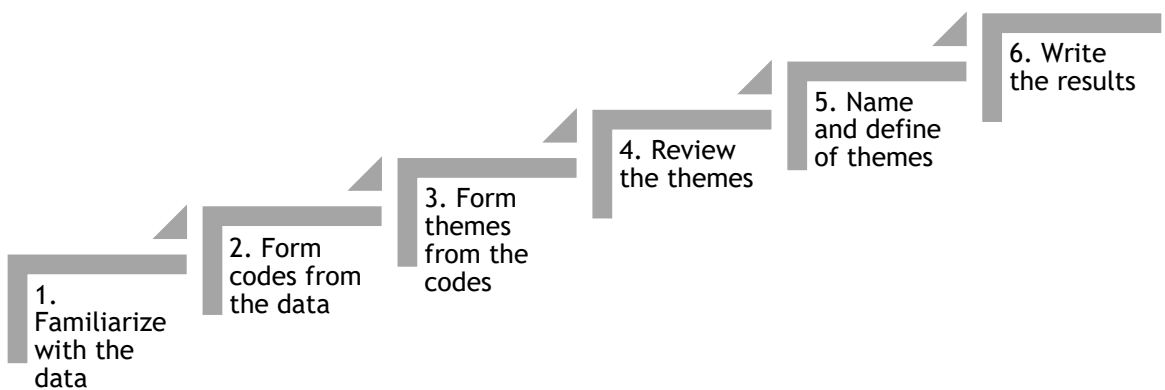

Figure 10: Phases of thematic data analysis (Nowell et al. 2017)

4.2.1   Phase 1: Familiarize with the data

Phase one is described as becoming familiar with the data of the study. This includes all forms of data from recordings to field notes and reflective journaling. It is important to include prior knowledge as data too, by documenting thoughts, interpretations, and questions throughout the data collection process. This phase requires an immersion into the data, which is achieved through active rereading of the data. (Nowell et al. 2017.)

According to Hirsjärvi and Hurme (2008), initial analysis begins already during the data collection, as observations can be made, and notes can be taken. Minimal notes were taken during the interviews, though the author wrote down reflections and observations immediately afterwards. After the data were collected, the recorded interviews were downloaded and listened to twice in their entirety by the author. Once, immediately after each interview and once again before the transcription process began. This was done to get a holistic sense of the data.

Transcription

Transcriptions are decontextualized but meaning depends on context. Transcribing is a form of translation then; from oral to written. Both forms of language have their own set of rules and an interview transcript may seem incoherent without the context of the spoken conversation. The transcription process must be explicitly described. (Kvale 1996.) When interviews are recorded for data analysis purposes, it allows the researcher to include voice intonation and pauses within data analysis. Facial expressions also tell the interviewer about reactions the respondents may have to the topics discussed. (Hirsjärvi and Hurme 2008.) The original data was in the form of two recorded interviews held over telecommunication. The author had her video on for both interviews but allowed the respondents the freedom to choose whether they used their camera. One recording includes video recording of the interview, while anther does not. To combat the influence this may have had on the results of this study, the author did not include visual observations in the transcription of the interview with the video recording and attempted to process the two recordings equally.

If it is necessary for the personal data to be connected to the subject, pseudonymization can assist in protecting the privacy of the subject, through the separate storing of additional information needed in identification. (EU Parliament and EU Council 2016.) In protecting the identity of respondents, each were assigned a letter which was used instead of their names. Names were omitted entirely from the transcriptions. The fact that this study is published in English gives some added degree of anonymity.

Both interviews were transcribed in Finnish and by the author alone. After each interview was transcribed, the author listened to both interviews in full, twice, while reading along and correcting any mistakes. The spoken word was transcribed verbatim, with all mistakes, repeats of words and slang terms included. Pauses were included in the transcription if there was a pause in the conversation longer than 2 seconds. Longer pauses were recorded as long pauses if they were longer than 5 seconds. After the transcriptions were deemed accurate, two copies of each transcription were printed at the University library for the purposes of further analysis. The first interview, in the same font, font-size, and line spacing of this text (Trebuchet MS, 10, 1,5) amounted to 18 pages with 6890 words, and the second interview to 16 pages with 7759 words total. Throughout the analysis process, the author would return to the full transcriptions and/or interview recordings as needed. This was done when context of authentic separated data was questioned. Familiarization was an active process throughout the extent of this study.

This analysis was conducted in the original language of the data collected, Finnish. According to Temple and Young (2004), when and by whom translation is done may have ontological importance to the analysis of the data. If the researcher is fluent in the local language, which in this case the author is, she can translate the text herself. It is advisable to give insight on the translation process by discussing the points at which the translator had to stop and think

about meaning. This can improve the validity of the translation process and the results of the study. (Temple and Young 2004.)

4.2.2 Phase 2: Form codes from the data

The next phase is in forming initial codes and Nowell et al. (2017) suggests that a coding framework be utilized for clarity. King (2014) suggests then that an ideal framework for the coding of the data using thematic analysis, lies in the framework used for data collection. Codes being essentially labels for a defined set of data that describes its relation to an important issue, are defined loosely by the themes and questions used to collect the data (King 2014). Coding happens after an in-depth familiarization of the data but requires constant refamiliarization. It is a reflective process that simplifies data characteristics. (Nowell et al. 2017.) An analysis framework was not used but an inductive approach was adopted, to better accommodate for the voices of the respondents. The initial unit of analysis was key words and phrases from the data, but the unit of analysis progressed in the second coding of the data to "meaning" units (refer to Table 6).

This second phase was done by hand and according to Hirsjärvi and Hurme's (2008) depiction of the process. Initial codes were identified and documented on one of the copies of the printed transcriptions of each interview. Sections of text were identified to "belong" to a certain code and these sections were then cut out of the second copy of the transcriptions. The cut-out coded text was then attached to an index card labeled with the code. These index cards were then placed in front of the author as she continued to code the text, making it easier to add text sections to a similar code because the data included four similar accounts of experiences. In this way, the coding was not entirely inductive, but contained deductive properties as well.

Initial code	Corresponding authentic data	Re-coded as…
(Securing) PPE	… we received from the security-of-supply centers these so-called supplies which were stored there at some point for this purpose, but it became apparent that they too were slightly outdated … and masks smelled a bit like cellar …	Security-of-supply centers supplied the "corona centers". Supplies from the security-of-supply centers were old and smelled bad.
	… (supply shortages) were not seen … because I have a really good nurse … whom I relieved (from other tasks) for many months in the beginning to only order supplies and such so we had supplies …	Significant resources were used to secure necessary supplies.
	… there were challenges with (the) logistics (services) in the beginning but then	There were challenges with securing necessary supplies.

	when they understood that we are on this kind of priority delivery list … orders go ahead of other primary health care clinics in regard to PPE …	COVID-19 care sites are on a priority list for supply delivery.
	… we have sufficient supplies now but in the middle of March when the COVID-19 care site opened, then the situation was completely different, like one day at a time, let's say for the first couple of weeks … wondered the whole time that will we get enough PPE, and will we get more and can we maintain operations …	There were challenges in securing necessary supplies (repeat). COVID-19 care sites had supplies enough for one day at a time in the beginning

Table 6: Depiction of first and second coding processes

Coding, cutting and the organizing of cut-out text with index cards happened one page at a time, to ensure clarity of the thought process. Each cut-out piece of text was labeled with the respondent's identifying letter and timestamp for temporal placement within the context of the authentic data. At the end of the initial coding of the first interview, there were 63 codes and at the end of the initial coding of the second interview, there were 69 codes in total. This goes to show that many of the initial codes from the first interview were applicable, and therefore used, with the coding of the second interview. After attempting to proceed to the next phase, which is to make connections between the codes, it became apparent that fragmentation had occurred. Further break down of the initial codes happened, as Table 6 depicts. After the data were re-coded, there were a total of 134 codes.

Nowell et al (2017) states that coding within thematic analysis must be systematic and consistent to produce reliable results. It is then suggested that a coding framework or template be used for the initial coding of the data, though the data can also be coded inductively. Using a coding template, such as that described by King (2014), would change the analysis from an inductive approach to a more deductive approach. The interview framework could have been used as a framework for analysis as well, but since the interviews were thematic and the framework only loosely applied to each interview, the data were coded inductively. A deductive categorization of inductively formed codes was done using the main themes of the interview framework as a trial. It produced a thinner objective account of experiences, whereas the completely inductively coded and categorized data produced a thick and subjective version. One respondent also confirmed that the fully inductive analysis better represented her experiences.

4.2.3   Phase 3: Form themes from the codes

Phase three involved identifying themes within the codes. This was done by examining the completely coded data. Themes combine single components of data that may be meaningless

on their own, and they link large portions of the data together. They can be developed inductively or deductively. (Nowell et al. 2017.)

Themes were generated inductively in this phase by arranging and rearranging the paper codes into groups of similar codes, while refamiliarizing with the authentic data within each code. Some of the initial codes became themes in this phase. After organizing the codes into themes, the author would refamiliarize herself with the authentic data in the form of the full transcriptions, while asking the data "What data belongs under this theme(s)?". Some codes expanded or collapsed, though always in reference to the authentic data. Figure 11 shows how the codes in Table 6 were grouped together into themes.

		Securing sufficient PPE in the beginning
	Security-of-supply centers supplied COVID-19 care sites	
	COVID-19 care sites are on a priority list for their orders	
Supplies from the security-of-supply centers were old and smelled bad	There were challenges in securing enough supplies	
There were only enough supplies for one day at a time		
Significant resources were used to secure necessary supplies		

Figure 11: Example of grouped codes

4.2.4   Phase 4: Review the themes

Next phase is the reviewal of themes. Coded data is compared to the themes to make sure there is a coherent connection. Here, themes are assessed based on how accurately they reflect the meanings in the original data. Some themes may expand, while others may collapse completely. A manageable set of themes is produced in this phase. (Nowell et al. 2017.) In this phase, possible lower tier codes were collapsed into broader statements for clarity. Lower tier codes will be used to help describe the results in the next section. Any statements that applied only to a limited number of respondents, was marked with a star. All themes and figures were reviewed in the same manner. This phase was conducted until theoretical saturation was reached by the author.

4.2.5   Phase 5: Name and define the themes

The fifth phase involves defining and naming themes. This is done by determining what part(s) of the data is captured within each theme. Each theme requires an analysis and an

identification of the story behind it. Once all relevant sections of the data are included within themes, the analysis can be completed. (Nowell et al. 2017.) The four main themes which emerged from the analysis are state of flux, infection prevention, management of staff and overall experiences.

Below are two examples of the final mind maps; there were four main theme maps and eleven theme expansion maps. The first example is of the State of Flux mind map (see Figure 12), which includes the main theme, themes, and categories. Figure 13 is an expansion of the first category under "changes have been made to patient flow", which includes the categories and subcategories. The author reviewed all codes and themes, together with the authentic data, and ensured the inclusion of all data within the results of the analysis.

Non-essential care has been cut back on to focus on essential and acute services.	Changes have been made to patient flow due to corona work.	COVID-19 care sites have been in a state of flux for almosta a year and the work has changed immensely.
The aim of the COVID-19 care sites is to isolate suspect and confirmed cases of COVID.19 from other patients.		
Before the response work, nurses saw patients independently. Patient consultation practices vary among the COVID-19 care sites.	Nurses' roles have changed within COVID-19 care sites.	
Nurses have responsibililties beyond direct patient care and work flexibily.		
Meeting practices have changed completely.	Communication between stakeholders has improved, though certain organizational practices were temporarily discontinued at the beginning of the response work.	
Changes have been made to further education opportunities of staff.		
Nurse leaders have arranged to visit one anther's centers and are interested in knowing more about other methods.		

Figure 12: State of flux mind map

At this stage and before translating the results, respondents were asked for validation of the results. This was done to ensure validity, but also to promote the idea of the respondents being collaborators in the study. Validation of results also ensures that all relevant data surrounding the topic of the study is included in the results. One respondent gave feedback,

which was used to finalize the results. Finally, all four respondents validated the results and gave permission for the use of personal direct quotes used.

Recovery from COVID-19 response work is proving to be the biggest challenge for the near future.	Patient queues are growing and nurse managers are worried about their patients.	Non-essential services have been scaled back to focus on essential and acute services.
Telemedicine breakthroughs have been essential in securing non-essential services.	Nurse managers are looking for innovative solutions to restart or expand their center's normal services on the side.	
A channel for two-way text communication between nurses and patients is being developed.		
Non-essential services will be/are organized in spaces with separate entrances to the COVID-19 care site.		
Working on the phone can be stressful, as patients have a lot of need for care but there are limited resources available.	All municipal primary care centers are experiencing an unprecedented number of phone calls and it's exhausting resources.	
The importance of good need-for-care assessments is accentuated when working on the phone.		

Figure 13: Theme expansion mind map

5   Results

The purpose of this study was to describe the early experiences of nurse managers in PHC clinics in the greater Helsinki area dedicated to caring for patients with possible COVID-19 symptoms during the COVID-19 epidemic. The objectives were to make their response contributions known and to provide an IAR of response efforts. The capital area of Finland, which includes three municipalities, has four COVID-19 care sites. The four nurse managers of these sites were recruited for this study and all four voluntarily participated. Data were collected through thematic pair interviews and were analyzed using inductive thematic analysis. The research question was: What were the early experiences of nurse managers in PHC clinics dedicated to caring for patients with possible COVID-19 symptoms?

The results indicate that the COVID-19 care sites' nurse managers' experiences can be described using four main themes, state of flux, infection prevention, management of staff, and overall experiences. Figure 14 shows a summary of these results, depicting the themes under each main theme. The results are described in-depth below.

5.1   State of flux

The nurse managers spoke unanimously of how COVID-19 care sites have been in a state of flux for a year now and how their work has changed tremendously. Each respondent spoke of how before becoming COVID-19 care sites, their clinics functioned as large PHC providers within their communities, including urgent care services. The way in which the clinics' local community populations interact with their PHC providers has changed. Nurses' roles within the clinics have changed too and their experiences related to the work, as recounted by their managers, has varied. Communication between stakeholders has improved as experienced by the COVID-19 care site nurse managers, even though normal organizational elements such as staff trainings have been on hold.

> … we had been a big urgent care clinic … all patients needing urgent care came straight through the door and to the nurses … we used to have eight frontline nurses on Mondays receiving urgent care patients so the mass of patients was pretty big … informing the community … how could we reach at least some of them so that everybody doesn't rush in (on Monday) …

To preserve anonymity of respondents, when describing the results, the City of Helsinki shall be referred to as having just one COVID-19 care site. Otherwise, it may be easy to identify which information corresponds to which respondents. The respondents referred to the decision-making bodies as the cities within which their COVID-19 care sites are located, hence the results may include generalized statements concerning the cities involved. Respondents also referred to their clients as patients, therefore, the same terminology is used here.

5.1.1   Changes to patient flow

One respondent defined that the purpose of having COVID-19 care sites is to isolate confirmed and suspect COVID-19 cases from other PHC patients. This meant that when the clinics were dedicated to COVID-19 response work, their regular patients were directed to other clinics around their cities, respectively. One respondent said that their city has delegated the PHC responsibility of their COVID-19 care site's regular patients to the clinic's three geographically closest clinics. The other respondents said that their cities have opened their city district borders and all non-COVID-19 related patients can be served at any municipal PHC clinic.

According to all the respondents, provision of non-essential services has declined around the cities, as limited resources dictate that the focus continue to be on essential care. One respondent clarified that this is not to say that non-essential care is not being provided, just

that the number of non-essential appointments has declined. The nurse managers all spoke of how recovery from crisis response work continues to become more challenging as the epidemic and COVID-19 care site work continues. Treatment queues continue to grow, and the nurse managers were concerned for their local communities and regular patients.

> … for sure the biggest burden in the challenges is how do we get the burden from the non-essential care handled when we at some point get to that work … there is a large number of non-essential appointments waiting, clients are waiting impatiently … and what kind of bombs will we get there … the thousands, no thousands is no longer sufficient, but tens of thousands of clients in the queue …

All respondents voiced their concern and mentioned that they are looking for innovative ways to expand or restart provision of non-essential, but necessary, health care. One respondent mentioned that she is worried that their regular patients are not finding their way to other PHC clinics for care, because they may be waiting for their familiar local PHC provider to resume normal operations. She mentioned that is unclear to her as to whether the regular patients of COVID-19 care sites are being served at other PHC clinics in numbers that would reflect successful continuation of care.

> … in my opinion, the biggest thing right now is that our patients … I do not know where they are seeking (treatment) or if they are seeking (treatment) … it's something that we talk about a lot … our (patients) may not be seeking (treatment) from the neighboring clinic and may be strangely waiting for us to (become available) …

The nurse managers of COVID-19 cares sites have witnessed the quick development of telemedicine services. According to all respondents, appointments are being held remotely when possible and makes provision of non-essential, but necessary, health care possible. One respondent told of how two-way online communication between patients and nurses is being developed in their city, while another said that their city already operates such communication channels. The respondents spoke highly of their telemedicine services and hope that they will be utilized in the future too, to shorten treatment queues and aide in crisis recovery work.

> … we have arranged it so that we are not returning to the old way of doing things … utilization of digitalization is going to be a big part (in attending to treatment queues), like consultations by video chat …

According to one respondent, non-essential health care that requires an in-person visit to the clinic requires facilities with a separate entrance from the COVID-19 care site itself. All nurse managers told of how they are involved with the strategic planning of these facilities. Most respondents mentioned that they were only just starting to consider options for the continuation of onsite non-essential services, meaning, that they did not yet provide onsite non-essential services at the time of the interview(s). One respondent's clinic has started providing onsite non-essential health care services on the second floor of their building. These ser-

vices though, are limited to serving patients able to climb stairs, as the building does not have an elevator. The same respondent is looking into expanding their onsite non-essential care into a neighboring PHC clinic's facilities as well.

According to all respondents, the telephone services of COVID-19 care sites were delegated to other PHC clinics during the beginning of the crisis, though the responsibility for the services had returned to the COVID-19 care site staff in most cases. One respondent said that they were only just planning the return of telephone service responsibilities to the COVID-19 care site. Telephone services further stress the COVID-19 care site staff, as it is an added responsibility amidst crisis response work. Most respondents said that telephone services, including need-for-care assessments by phone, were overloaded with calls and call-back-requests as PHC clinics and cities are seeing record numbers of incoming calls. According to one nurse manager, telephone work is considered stressful because though resources are limited, patients have a lot of concerns and neglected issues. This meant that the importance of good and equitable need-for-care assessments that consider health care capacities holistically, is accentuated in the current situation.

> … especially (difficult) is the telephone work because for us, it is massive and when there are those patients who have been without care for a long time … our nurses (become) overwhelmed … and the challenge is that we get the patients back and treated … and that our nurses manage too because the burden can be massive … kind of limiting it there that treatment is necessary but according to urgency … and one thing at a time…

Both interviews included conversation around diverse ways of operating COVID-19 care sites. One respondent said that they serve patients by appointment only. Operating by appointment only was considered to be essential in infection prevention, as patients are not spending time onsite waiting to be seen. This in turn meant, that patients must call in order to make an appointment with the clinic. The city in question had a centralized phone system, which meant that this further exacerbated the overloaded system. Another respondent said that they operate by walk-in only, meaning that there are no appointments to be made. This frees the telephone system from potential calls made to schedule appointments related to COVID-19 symptoms, but then patients come onsite after self-assessing their need-for-care and potentially spend more time onsite because of queues. The worst-case scenario has been that patients have needed to wait outside for an hour before being seen. Another spoke of how they operate by appointments but also provides walk-in services. Walk-in services are not openly advertised, as they would prefer patients to come onsite with appointments. This was told to be unpredictable at best, in that the daily number of walk-in patients ranged from 10 to 34 patients. However, this method was seen by the nurse manager to serve infection prevention purposes and to provide services to patients beyond the capacity of appointments as needed.

All respondents agreed that if a patient experiencing potential COVID-19 symptoms presents themselves to any other PHC clinic, they are referred to the COVID-19 care sites. Other PHC clinics do not treat patients with possible COVID-19 symptoms.

5.1.2   Changes to role of nurses

According to two nurse managers, before the COVID-19 epidemic, nurses saw a lot of patients independently. With crisis response work, all respondents agreed that substantial changes to the role of nurses have happened in the COVID-19 care sites. Nurse-led appointments and on-site triage practices varied among the care sites. One respondent in both interviews mentioned that decisions made concerning the role of nurses within the COVID-19 care sites have come from higher management and for this, there was no agreement nor disagreement from the other two respondents.

One respondent described that in their COVID-19 care site, physicians see all patients alone. Nurses are responsible for background work (ex. telephone work) and work in supportive roles such as patient observation when needed. Another nurse manager's site operates utilizing physician and nurse pair-work. Physicians working in this care site see all of the patients too, but they have nurses documenting for them and assisting with other tasks. According to this respondent, some nurses are frustrated with scribe work, though many say that they learn a lot from the physicians in the process. Lack of staff resources prevents this site from also arranging independent work for nurses. The respondent said that one down-side of this pair-work system is that the site sees greater shortages in nurses as compared to physicians. On occasion, they have resulted to assigning physicians to work together, so that one physician performs the scribing and supportive tasks that a nurse would normally do. The physicians have flexibly adjusted themselves to these situations.

> … I do not get (staff) resources from elsewhere right now and it's unfortunate … they go to contact tracing and normally operating primary health care clinics … but there have been days when we have had two physicians working together … they have introduced themselves as a nurse who is actually a physician …

The third COVID-19 care site operates somewhat normally, according to its nurse manager, in that nurses see patients classified as mild cases independently, with low threshold physician consultation as needed. The nurses work together with physicians in pairs, though in separate rooms.

> … if there is a (mild case) then they go straight to the nurse, so essentially the same as during normal urgent care operations … a large portion of patients do not necessarily see a physician at all … the nurse assesses the need for care, of course with a low physician consultation threshold …

The majority of respondents stated that nurses involved with direct patient care are also responsible for other background tasks, though duties vary. In one COVID-19 care site, nurses

respond to two-way telecommunication messages, as time permits and flexibly. One respondent told of how their city had decided to redirect their COVID-19 care site's incoming telephone calls to the neighboring clinics until the beginning of December 2020, after which they returned telephone work responsibilities to the COVID-19 care site. Nurses experienced the break from telephone work as a benefit to working at the COVID-19 care site, and now that the telephone work was returning, the respondent was concerned for the wellbeing and motivation of her nursing staff.

> … at the beginning of December, our (telephone work) returned to us, which means that our work burden is actually really really tremendous …

Two respondents mentioned that telephone work has developed to include the possibility of working remotely from home. One of these respondents further explained that this requires that the nurses' home environment supports such work from home, in that patient confidentiality requires that telephone conversations be not overheard by third parties. Furthermore, as infection prevention measures require that staff with even mild symptoms stay home, working from home provides an opportunity for nurses to continue working even if they have mild symptoms. One respondent commented that working remotely requires planning though because work is done on a laptop computer belonging to the city. According to her, there are more nurses willing and able to work from home than there are available laptops.

5.1.3 Changes to communication between stakeholders

According to most respondents, communication between different stakeholders has improved drastically, though certain organizational structures, such as staff trainings, were put on hold. Meeting and training practices have changed entirely in their view. Two of the respondents were also keen to continue collaborating with one another after the interview.

> … actually, the entire (city's) operations have increased proficiency now and communication between different actors is much more dexterous than before … this type of network style of working has increased …

Meeting practices were initially put on hold, except for essential meetings. Essential meetings were told by one respondent to be daily morning briefings for smaller groups of staff and once weekly meetings for all staff. Another respondent recalled how initially they had held large in-person crisis meetings for all staff, until they realized that the practice was not advisable with the epidemic situation. They then moved their meetings to a telecommunication platform.

One nurse manager spoke enthusiastically about how meetings with outside stakeholders have been held over telecommunication as well. This has lessened the amount of driving that she has had to do in the past, which was seen as an incredibly positive development. In her opinion, telecommunication has made it easier and more affordable to have meetings, as partici-

pants do not spend time driving from one place to another and the cities save on kilometer reimbursements. This meant that issues that were previously handled by, for example email, are now discussed in meetings. This may increase the number of meetings that the respondent has scheduled all together though.

> … normally meetings were around (the city) and now (I) don't need to drive every day in different directions as everything happens on (telecommunication channel) … today there are an incredible number of meetings and my calendar fills with them because it's so easy to say let's do a (telecommunication channel) meeting … of course this means less email too, so there's two sides to it …

Only one respondent told of how during initial capacity development, staff were trained in elements of COVID-19 treatment. This training included mostly recapping of resuscitation and respiratory patient care practices. The other respondent in this interview said that they did not have this form of training. This became evident too with the conversations had over the validation of results as well, as one other respondent identified this as an aspect of capacity development she had not experienced.

> … in the spring … acute care trainings where we reviewed resuscitation and other issues relevant to corona patients' care, such as oxygen therapy … c-pap transfer device trainings … respiratory patients' care phases … corona testing had its own training…

One nurse manager, in response to the above statement, said that all their staff trainings and further education possibilities were initially put on hold. Now, trainings are held remotely, though resources for attending trainings are still limited.

5.2   Infection prevention

Conversation surrounding infection prevention was significant and was seen throughout the two interviews regardless of interview theme. There were four themes under the main theme of infection prevention, stakeholders involved in infection prevention, planning of infection prevention measures, protocols in infection prevention, and equipment used in infection prevention.

5.2.1   Stakeholders involved in infection prevention

When talking about stakeholders involved in infection prevention, nurse managers identified two groups, experts and staff. Patients' roles in infection prevention were mentioned too but more indirectly. The experts involved were defined to be the municipalities' epidemiological departments and infection control nurses. Not much was said about the epidemiological department itself but simply, that the epidemiological department heads the COVID-19 crisis response work.

Each respondent mentioned an infection control nurse and spoke of how the infection control nurse was especially involved in the beginning with the planning and preparing of the clinics for COVID-19 response work. All respondents received direct guidance from them. The infection control nurses walked through the clinics with the respondents before opening, to ensure that everything was in order. Only one respondent mentioned that the infection control nurse has been back for another walk through to reassess the infection control measures being implemented, and this had happened once and within the recent past (before the interview).

There was unanimous agreement among respondents that staff are responsible for ensuring aseptic practices within their own practice, and for receiving and implementing new guidelines as they become available. All nurse managers mentioned having triage nurses assigned to the door to receive and guide patients. Their role in infection prevention was seen as crucial, in that they were responsible for guiding the patients in infection prevention measures. They ensure that patients use hand sanitizer upon arrival and give masks to patients without. In the clinic where they operate by appointment only, the triage nurses check to make sure that all patients entering the premises have appointments as well.

> … when a patient comes through the door … we have a nurse receiving them … takes hand sanitizer and patient puts on a mask and then hand sanitizer again and then they are directed to sit …

At the door, triage nurses also direct patients to their respective waiting areas. During one interview, the respondents spoke of how confirmed COVID-19 cases were handled in different ways. One respondent said that confirmed cases are taken to an empty room to wait for their appointment, from which they are then escorted to the room in which they are being seen. Another respondent said that their confirmed cases are all seen in one room but did not mention if they were waiting in separate spaces from others.

> … the only distinction that we have is if we know them to be corona positive, then for them we have their own … room in which they are cared for …

> … corona positives … they wait in a certain … room … and then we go get them to the room …

The same interview contained conversation between the two respondents about how their common waiting areas were organized. Triage nurses at the door ensured that patients were directed to the corresponding waiting area. One nurse manager said that they have two separate waiting areas. One waiting area is dedicated to patients over the age of 70, while the other side is for younger patients. This was seen as a protective measure for the most vulnerable patients. This was especially notable because vaccinations had not yet started at the point of this interview. The other respondent said that their patients wait in separate areas according to their triage status. This was seen as helpful because different teams of staff cared for different acuities of patients.

5.2.2   Preparation for infection prevention

Preparation for receiving COVID-19 suspect and confirmed cases were unanimously told to be in cleaning the clinics and organizing safe operations. All respondents told of how capacity development included cleaning of their clinics and of how they had minimal time to prepare. Cleaning and organizing happened in the beginning of the crisis right after the respondents were informed of the dedication of their clinics as COVID-19 care sites.

Cleaning included going through each room and removing extra things, such as books, magazines, and curtains. One respondent wondered at the amount of unnecessary stuff in all the rooms and said that they had gone through and simplified the environments according to LEAN practices around five years prior. She mentioned how easy it is to become accustomed to the stuff and therefore, not "see" it.

> … even though … five or six years ago the physicians' rooms were cleaned according to LEAN … oh heavens the amount of stuff that had accumulated in every corner and how quickly the eyes (get used to it) …

According to all respondents, organizing for the safe operation of COVID-19 care sites included planning the logistics of PPE, planning for the flow of people, and putting up signs for navigation and information around the clinic. Signs were mentioned as a secondary thing by one respondent, so there was not much further information on what signs they were, and where they needed to be put up. The systematic restocking of rooms was also seen as an important aspect of preparation for effective infection prevention. Personal protective equipment and other equipment needed for patient care and assessment, were restocked daily and in small amounts to prevent their potential contamination. One respondent said that they had masks and hand sanitizer dispensers placed all around their clinic.

A majority of the respondents spoke of how it was important to plan for the donning and doffing of PPE. Donning and doffing areas were arranged differently in each of the sites, but clear protocols were not elaborated upon. One respondent said that they had a designated donning and doffing of PPE area, which was in staff quarters before moving into the area in which patients are. The others alluded to donning and doffing but did not define where this was taking place. One of these respondents mentioned, as a secondary issue, that PPE is kept in the rooms in which patients are seen, suggesting that donning and doffing of PPE is taking place in the exam rooms.

All respondents talked about how furniture was also arranged to accommodate for physical distancing, in both the waiting rooms and break rooms. One respondent said that the PPE donning and doffing area tended to become a bottleneck during rush hour, and this was carefully considered. New arrangements were made and included scheduling of staff in such a way that not everyone started or ended their workday at the same time.

> … changed the placement of the chairs and tables and removed extra chairs …
> so that gathering restrictions are implemented …

5.2.3 Protocol for infection prevention

Infection prevention was described as systematic and that there were protocols to follow for how to best prevent infections. Specifics that were mentioned were clean and dirty sides, separate entrances for corona patients, adhering to the guidelines implemented by the government, and minimizing patient movement and time within clinics.

Nurse managers defined clean and dirty sides both internally and externally. For instance, the COVID-19 care site itself was considered "dirty" when compared to the rest of the facility if the facility had other functions, as two of them did. Within the care sites, clean and dirty sides were also mentioned, though it was unclear as to how they were practically defined in separate clinics. According to one respondent, the clean side was generally considered to be staff quarters such as the break room, and the dirty side was where patients wait and are cared for. Another respondent spoke of how this border between clean and dirty sides is where they had arranged for donning and doffing of PPE.

All but one of the nurse managers said that they have completely separate entrances for their COVID-19 cares sites. One respondent said that their staff also entered the building using a separate entrance from the rest of the hospital faculty within which the COVID-19 care site was situated. Separate entrances were considered an important IPC measure when planning for the continuation of the provision of non-essential services.

In preventing infections, the respondents spoke of adhering to the government's restrictions, such as gathering restrictions and distancing recommendations. Gathering restrictions forced all meetings and trainings to be put on hold or to be conducted over telecommunication. Lunch breaks were organized so that gathering restrictions were followed. Each respondent told of a different way of organizing lunch breaks. One respondent said that they had organized staggered lunch breaks but did not elaborate further. Another respondent said that they had organized lunch breaks so that everyone always ate with the same group, so that if exposures did occur, it would be easy to conduct contact tracing. A third respondent said that their staff use an excel sheet, which one of their physicians designed. Each morning, everyone reserves themselves a time slot for lunch. The fourth strategy was to organize lunch so that staff use different break rooms according to their daily work assignments. This required arranging meeting rooms into break rooms with refrigerators, microwaves, and water. Water was provided in the form of a water cooler/dispenser.

> … we have three (break rooms) at the moment and it is very clearly divided
> that when you are working here, then you go there to eat and when you are
> working over there, you eat over here …

Physical distancing was considered by removing chairs from both the break rooms and patient waiting areas. COVID-19 care site staff at one clinic were restricted from using the common hospital restaurant, so as to keep their distance from other hospital staff. One respondent told of how the PPE donning and doffing area is crowded and tends to become a bottleneck during rush hour. They considered physical distancing recommendations and began staggering the donning of PPE in the mornings.

> … we stagger it in a way so that not everyone is donning at the same time … triage goes first and then little by little …

In minimizing the possibility of exposure, patient movement and time spent at the COVID-19 care sites were considered as important factors. Waiting times were minimized as much as possible, and one respondent mentioned that the aim is to have patients in and out in less than an hour. The time spent within the care site was defined by one respondent to include all aspects of care including laboratory services. According to three nurse managers, at times patients have had to wait for (up to) an hour just to be seen. Two respondents said that they were attempting to minimize waiting times by utilizing an appointment over walk-in strategy.

According to one nurse manager, patient movement was minimized by the arrangement of corona testing. Corona tests were said to be taken at the appointment by the nurse or physician, or by a separate laboratory service provided at the COVID-19 care site. According to one respondent, the separate laboratory service station provided other services (ex. blood work) as needed. This was thought to further limit patient movement, in that they did not need to seek laboratory services from other locations. One respondent said that they were just planning on returning laboratory services to their clinic as well. As context, this specific PHC clinic had discontinued on-site laboratory services years prior, and the return of services was in reference to that.

Staff sick leave protocol was also seen as an important measure in infection prevention. All respondents spoke of how staff with even slight symptoms were required to stay home. Surveillance was not mentioned in either interview. According to one respondent, distance working developments made the increase in sick leave easier to manage, because staff who considered themselves well enough to work regardless of symptoms were able to do so from home. Respondents said too that if staff or any of their family members experienced even slight symptoms, they were directed to be tested by occupational health services. Three respondents firmly declared that their clinics have not had nosocomial infections. One respondent did not confirm or deny either way.

5.2.4   Equipment for infection prevention

There were three main categories under the theme of infection prevention equipment, PPE, disposable utensils, and ionic air purifiers. One nurse manager said that their city provided

lunch for their staff and that because of this arrangement, they also provided them with disposable utensils as an infection prevention measure. Only one respondent mentioned ionic air purifiers and she said that they had them brought into each consultation room in April 2020. The topic surrounding PPE was significant, however. Respondents told of how they were worried for the safety of their staff when PPE sufficiency and effectiveness were uncertain. One respondent said that protecting staff was a part of leadership at COVID-19 care sites.

According to the nurse managers of COVID-19 care sites, new guidelines concerning PPE continue to be generated and a large part of adhering to PPE guidelines is in staying up to date on the newest guidelines. One respondent spoke of how in the beginning, the guideline was to change the mask in between each patient, as was done before the crisis and under normal circumstances. Then the guidelines changed to be that one could wear the same mask for a few patients. At the time of interview, she explained that the guideline was to wear the same mask for as long as you did not need to remove it

There was unanimous agreement that clear and straightforward instructions for using PPE was important and that all staff should abide by the same guidelines. According to one respondent, these guidelines come from the epidemiological departments. The one nurse manager who said that they had set up PPE donning and doffing areas between the "clean" and "dirty" sides of the clinic, also said that it was important to be clear on the order in which PPE should be donned and doffed.

One respondent spoke about how they invested in securing PPE, especially at the beginning of the crisis, as there was uncertainty around the sufficiency of it. One said that she had a hard time believing that there were no masks because it was unheard of before. Another said that there were horrible and bewildering situations related to the lack of PPE resources. All nurse managers mentioned receiving PPE stock from the security-of-supply center. One respondent spoke of how many of the supplies that came from there were outdated and the masks smelled of cellar.

> … we received from the security-of-supply centers these so-called supplies which were stored there at some point for this purpose, but it became apparent that they too were slightly outdated … and masks smelled a bit like cellar …

Two respondents said that COVID-19 cares sites were lifted onto a list of critical operations, which meant that they received necessary supplies before other clinics. One respondent told of how in the beginning, they lived one day at a time with their supplies. When they would count supplies at the end of the day, they would realize that if they did not get more supplies the following day, operations may cease. It was commonly understood that if they had not had supplies, they would also not have been able to provide COVID-19 related health care services.

> … we have sufficient supplies now but in the middle of March when the (COVID-19 care site) opened, then the situation was completely different, like one day at a time, let's say for the first couple of weeks … wondering the whole time that will we get enough PPE and will we get more and can we maintain operations …

One nurse manager relieved one of her nurses from all other duties, dedicating her efforts solely to securing PPE. She said that she had the nurse in this role for a few months' time.

5.3   Management of staff

The COVID-19 care site management was described to require strong leadership skills during a time of high emotions. All respondents were eager to tell their stories related to the very beginning of the crisis. Recruitment of staff began immediately after the respondents were informed of the coming changes to their normal operations. As became evident throughout the interviews, recruitment was an ongoing process too which fluctuated with the staff and epidemic situations. Respondents also dealt with big emotions such as uncertainty and fear, not just in themselves but also in their staff. Respondents told of how they had to adjust their leadership styles to better accommodate the complex needs of their staff, especially in the beginning of the crisis. Motivation of staff is now seen as the biggest immediate concern of COVID-19 care site managers.

5.3.1   Recruitment of staff

When the respondents heard about the decision to dedicate their clinics as COVID-19 care sites, the first thing they did was recruit the necessary nursing staff and address their concerns. The number of nurses needed depended on the model of operation and the epidemic situation. Need for further recruitment was at times accentuated by low work motivation and burn out of nursing staff. Nurse shortages affect the recruitment process, as do the spaces within which the COVID-19 care sites operate. The way in which the respondents spoke of engaging and sharing information with their nursing staff at the beginning of the crisis to determine which staff would remain at the COVID-19 care site, was named recruitment. The term recruit is used lightly here, as one respondent did not agree with the context of the term when verifying the results. She said that she does not feel like she recruited anybody to the COVID-19 care site work, rather she informed her staff of the coming changes.

Nursing staff were interviewed by the respondents to assess for personal preferences and needs, then transferred elsewhere as needed. All respondents spoke about transferring pregnant and otherwise at-risk staff to other PHC clinics at the beginning of the crisis.

> … at our clinic everyone is (there) purely voluntarily, yes, and they have been asked and they have volunteered …

Though working at the COVID-19 care sites was definitely considered voluntary, some light contradictions to the voluntary nature of the work were made. According to two respondents, in the Emergency Powers Act (which was enacted at the beginning of the crisis) made staff recruitment easier, which raises the question of how and was the recruitment then at that point completely voluntary. One respondent made it clear that staff were not recruited into working at the clinic, as the clinic's entire staff resources were included in the decision to dedicate the clinic to COVID-19 work. Another respondent questioned the voluntary nature of incoming staff reinforcements from other clinics.

> … we received a few from a couple of clinics then who came then … voluntarily or forced either way …

Three respondents said they started COVID-19 care site operations with their own nursing staff, including some reinforcements from outside as needed. One respondent said that she began COVID-19 care site operations with recruited nursing staff from the city's different PHC clinics. She had about half of her own staff and half from other PHC clinics.

The respondents spoke of how the number of nurses needed fluctuated with the epidemic situation. The need for recruitment was affected by staff wellbeing as well because staff were given the option to transfer elsewhere, should they find the COVID-19 care site work too much of a burden. According to two respondents, nurse shortages affect the recruitment pro-cess as well, though one respondent said that they are more hindered by physician shortages instead. According to most respondents, there was more interest in being involved in crisis response work at the beginning of the crisis, so recruitment was easier. At the time of the interview, one respondent thought that there seemed to be less interest.

> … maybe (we are not seeing) the … same flocking of nurses to our COVID-19 care site as was in the spring … now there aren't as many interested …

There was unanimous agreement on how the general lack of resources affected recruitment too. One respondent mentioned that the city transfers staff resources as needed and at the time of the interview, the emphasis was on contact tracing and provision of normal PHC ser-vices. One respondent mentioned that even if there were nurses and resources available from which to recruit, their facility does not have room for more staff as all rooms were being uti-lized, with some nurses sharing rooms as well.

5.3.2 Motivation of staff

Motivating staff was seen as the single biggest task of the COVID-19 care site nurse managers at the point of the interviews. The respondents have not had many resources for this and have relied heavily upon their own leadership skills. They have made internal and external work rotations possible and have included staff in the planning and development of services. Work environment and collegial support were factors that affected staff motivation as well.

Occupational health services have provided debriefing sessions for staff, both as individuals and in groups. While motivating staff was described as a challenge, most respondents felt that they are successful in doing so.

According to the majority of respondents, the most challenging time for staff motivation was after the summer of 2020 and into the fall. One respondent elaborated that at this point, everyone had been expecting the crisis response work to have finished by then and had been hoping to return to normal work and life. When the epidemic situation began worsening, the staff began losing hope.

> … the neck breaking link began after the summer holidays when we started (assessing) where are we now, but then we saw that this is not ending after all and that we had to still manage … that was a bit challenging …

According to the respondents, work rotations were the most utilized and effective way to motivate staff. Internal work rotation within the COVID-19 care site included different assignments such as telephone work, at-the-door triage, patient observation and first aid. Respondents told of how they listen to their staff regarding their assignment preferences and try to accommodate them as much as possible.

An external work rotation was described as a temporary transfer to another clinic within the city. A replacement was then transferred from the receiving clinic to the COVID-19 care site. The rotation period, according to one respondent, was two months' time. She further elaborated that of that two months' time, the first week for the incoming transfer is onboarding with a permanent staff member. The general message was that when staff began burning out, transfers were made possible.

> … we have begun to incorporate work rotations so that part of the staff has returned to their own clinics and then new ones have come … so if (one) begins to feel that now would be the time to do something else, it is possible too, as nobody is forced to stay …

One respondent told of how when she began seeing lower motivation levels in her staff, she informed them that they can volunteer to be transferred, as there are nurses who would be interested in transferring to the COVID-19 care site. She said that not one nurse volunteered to be transferred and they appeared to want to persevere to the end, together. All respondents spoke of how team spirit is present in the crisis response work and how it helps to motivate staff. All respondents said that their nursing staff motivate and trust one another and work very well together. The respondents spoke highly of their staff and of how they are largely self-directed. As managers, they can delegate responsibilities without hesitation and responsibilities are seen to motivate staff as well. One nurse manager said that by listening to and incorporating the clever ideas and innovations of staff, she included them in the planning and developing of services, which also had a motivational impact.

Occupational health has been involved in the wellbeing and motivation of staff, as all respondents spoke of debriefing services. One respondent has been included in the debriefing sessions, along with the clinic's physician manager. She mentioned that her staff welcomed her there and appreciated having the time to discuss issues with management, as time for discussion is otherwise limited.

One respondent mentioned that they had already had a couple debriefing sessions, and another said that sessions started in the fall and are held around every 6 weeks. Another respondent mentioned that sessions had just started at the beginning of the year 2021, and that staff were then also informed that they can schedule individual sessions with occupational health services as well. Apparently and according to the respondent, no staff had taken up on the offer of scheduling individual sessions and she thought that simply knowing that the services are available helps. The last respondent mentioned that debriefing was a regular occurrence but did not elaborate on when they started or how often they are held.

> … we have had debriefing sessions now twice but maybe our nurses have not experienced COVID-19 care site work to be too much of a burden … maybe our nurses have instead experienced this COVID-19 care site work to be a little monotonous …

One respondent mentioned that they do not have additional resources, such as financial bonuses or extra vacation days, for motivating the staff. She said that she has had to rely on the self-motivation skills of her staff. Another respondent mentioned that staff motivation is inspired by motivational speaking.

> … not in any monetary way have we been able to motivate because … there is no promise of extra vacation or anything like that … it comes from within the staff and from (when) we try to support them to … trust themselves and others …

> … staff motivation … we have tried to speak a lot about … this is this moment's catastrophic situation and we probably just have to survive … we have to try remember to think that this is not permanent …

One clinic provides lunch for their staff, because the staff are restricted for IPC purposes from dining at the common hospital restaurant. She said that the city thought that providing lunch was an appropriate way to make up for that inconvenience and at the same time, thank the staff for their service. Another respondent mentioned that patients have sometimes brought cakes, which are much appreciated by the nursing staff. She also said that pharmaceutical companies have begun their medication presentations again, from which nurses too receive something small to eat.

> … clients have sometimes sent some cakes here … medication presentations continue and from them the nurses too get something small to eat … and all of these nice things help to (motivate) and we get good feedback …

5.3.3 Leadership skills needed in COVID-19 crisis response work

Leading crisis response work at the COVID-19 care sites has required enhanced leadership skills, such as mindful presence, openness, and listening. The respondents told of how they have had to be creative in solving problems and good at investigating issues, such as new sick-leave protocols and the paperwork involved. They have had to enhance their observation skills and become extremely sensitive to the needs of their nurses.

Mindful presence and good listening were described as qualities that communicated availability. The respondents told of how they enhanced their availability. One respondent told of how she works on-site, and her office door is near the nurses' break room. She leaves her door open as an invitation to approach her and she visits the break room regularly to chat with the nurses. Another respondent spoke of always being available through telecommunication channels.

> … I always have my door open, and many come by throughout the day to ask something or just to chat …

Clear communication skills quickly became an important part of crisis management. Respondents told of how they had to consistently communicate about new protocols and information, but in a manner that was as clear and easy to understand as possible. One respondent said that by focusing on the clarity of her communication, she was able to reassure her nursing staff in times of uncertainty.

> … when I think of the chaos in the beginning … tried to bring forward as clearly as possible, for example, what we knew of the virus in that moment … calmed the staff for example about the personal protective equipment … with as clear and straightforward of communication as possible …

Openness in crisis communication was seen as the ability to admit when one does not know or have further answers to questions. One respondent said that this was an important aspect to communication, especially in the beginning of the crisis. Some respondents felt that the repetitive nature of uncertainty and not knowing was exhausting in their leadership positions. Openness was described mostly in relation to crisis communication, though one respondent referred to the open communication that she practices regularly with her staff. This communication style came forward in the interview when spontaneous discussion between respondents unfolded surrounding her staff's wish for her presence at their debriefing sessions. She mentioned that she has an incredibly open relationship with her staff in general, reflecting on her leadership style.

One respondent described how her leadership style had to accommodate for the new leadership environment. She said that she had to enhance her ability to recognize individual needs within her staff, as suddenly experienced nurses had more reservations related to work than

new nurses. In response, she developed a more individualistic leadership approach, as opposed to her former approach of treating everyone equally and as a holistic team.

> … I noticed that a leadership style in which I speak to the nurses as one team and where I treat nurses somehow equally … I had to change it … I end up individually taking and considering each nurse kind of like according to their personality … it somehow feels like I have developed sensory antenna which are still extremely sensitive to … who is burning out …

As nurse managers of COVID-19 care sites, respondents felt that they have had to actively investigate issues, which to some, was overwhelming at times. There was a constant flow of new information and protocols, which required active work on behalf of the respondents to keep up to date. Issues such as sick leave protocols, which were constants before, were suddenly subject to change or consistent change. New ways of doing things and the paperwork that may be involved required familiarization and time. The respondents spoke of how they have had to learn a lot of new things in a short period of time.

> … it is a lot of every day … deliberation and investigating issues as new obstacles come up all the time and then we have to think about what to do with them …

Many respondents told of how creative and innovative problem-solving skills were needed for the new and unprecedented situation. The setting up of and planning for the COVID-19 care sites required creativity, for example, in how to organize lunch breaks to accommodate new IPC standards. One respondent mentioned that she has had to be very creative in producing different solutions specifically in relation to this issue.

5.4   Experiences as a whole

All four nurse managers told dramatic stories of how their COVID-19 care site work began. In the beginning of the crisis, two respondents heard of the decision to dedicate their PHC clinic as the COVID-19 care site on Friday the 13th of March 2020. One respondent heard of the decision sometime later and through the local newspaper. She lightly criticized her city's timeliness in communication. The last clinic was opened as reinforcements to the city's original COVID-19 care site. While this clinic opened a bit later than the rest, the storyline of the birth of the COVID-19 care sites remain similar throughout the four experiences. The general storyline states that the respondents had a few days' time to set up operations, including dismantling normal operations, before opening as their cities' COVID-19 care sites. The urgency and stress of setting up operations over a limited period was stressed upon. Each respondent told intense stories relating to the "birth" of their COVID-19 care sites.

> … there happened quite a lot … we got the information on Friday afternoon the 13th of the third that on Monday operations had to be completely different and we had until then to cancel or move all of Monday's appointments from this facility to elsewhere … (reiterates) there was the weekend's time … and all spac-

> es needed to be handled again, all rooms had to be organized … we had had the time to warn staff that afternoon that Monday would be new operations and everyone was asked to come in early to work … it was a big job over the weekend … and also all the procedures like how do we … actually handle and what and where … and how do we organize the whole (city's) operations anew …

The respondents spoke openly about the big emotions and concerns they have experienced. The feeling that was mentioned and talked about the most was uncertainty. It was especially prevalent in the beginning of the crisis but continued throughout their experiences. Disbelief and hopelessness were related to situations surrounding the shortage of PPE in the spring of 2020. For example, the respondents spoke of how it was hard to believe that there really were no masks available. They have also experienced worry about the effectiveness of PPE. Fear of the virus was prevalent in the beginning as well, especially when so little was known. The respondents spoke about their own fears, as well as the fears of their staff. In an environment that was quickly changing and in a constant state of flux, they had to just survive and get through it.

On the other side, crisis response work had also been rewarding. There was a certain morale and fighting spirit present in the work. All the nurse managers spoke of how together with their nurses, they do not want to give up or give in. They want to see this crisis to the end, together. The respondents also had feelings of having succeeded, for instance in infection prevention with the apparent lack of nosocomial infections and regarding staff motivation with limited resources. Two respondents said that it has been a once-in-a-lifetime experience to be on the frontlines of such a global issue. They felt honored to have had the experience of managing Finland's COVID-19 care sites.

> … I can say that it has been a unique experience. I would not have believed a year ago that we would be in this kind of a situation that the entire world has gotten this virus … pretty cool that I have been able to experience this on the frontline …

Changes have been made to patient flow due to corona work.	State of flux
Nurses' roles have changed within COVID-19 care sites.	
Communication between stakeholders has improved, though certain organizational practices were temporarily discontinued at the beginning of the response work.	
Stakeholders involved in IPC are classified as experts and staff.	Infection prevention
Planning of IPC involved cleaning and stratgeic planning of operations.	
Protocols for IPC included clean and dirty sides, separate entrances, appropriate use of PPE, and minimizing exposure.	
Equipment used in IPC was PPE, ionic air purifiers, and disposable silverware.	
Recruiting staff to the COVID-19 care site work was an important part of initial capacity development and recruitement is a continuous process.	Management of staff
Motivating staff was seen to be the (current) single biggest task of nurse managers of COVID-19 care sites.	
Leadership skills were enhanced, adapted, and relied heavily upon.	
Each respondent told dramatic stories of how their COVID-19 care sites were "born". They each had limited time to make big unprecedented changes to operations.	Overall experiences
Nurse managers have experienced a lot of different emotions, from fear and uncertainty to success and team spirit.	

Figure 14: Summary of results by main themes

6   Discussion

The purpose of this study was to describe the early experiences of nurse managers of PHC clinics in the greater Helsinki area dedicated to caring for patients with possible COVID-19 symptoms during the COVID-19 epidemic. Four nurse managers of Finnish COVID-19 care sites were interviewed using thematic pair interviewing. The respondents readily and openly told of their experiences. They all seemed to enjoy the opportunity to converse with their peers

about a unique professional experience. This dialogue between colleagues was made possible by this study.

The results indicate that early experiences of the nurse managers of the four COVID-19 care sites in the capital area of Finland, can be described using four main themes, state of flux, infection prevention, management of staff, and overall experiences. This is an IAR of one aspect and one moment of the COVID-19 crisis response work in Finland, covering the time from the beginning of the crisis to November 2020 when the first interview was held. The results show how PHC organizations have contributed to the crisis response effort and suggest that PHC organizations have been immeasurably burdened by the crisis.

The author was able to work part-time in one of the COVID-19 care sites for two months to expand her contextual knowledge of the work related to it. Any references within the discussion and conclusion to the author's experience refers to this work experience. The data were collected and analyzed, and the results written before this experience to ensure objectivity in these areas.

6.1   Capacity development for COVID-19 care sites

This first main theme deals largely with technical capacity development, as defined by Morgan (2013) to be tangible logistics, systems, structure, and organization. Capacity in this form focuses on needs and problem-solving, which in this case the need was to develop a separate COVID-19 care site and the problem-solving was in how to do it. The reason the theme is not named capacity development is because of the inductive nature of the data analysis. The respondents did not speak directly of capacity development but spoke of the state of flux, which reflected it.

Perhaps the most prominent aspect of this main theme is that the state of flux had lasted almost a year at the point of the two interviews. Even so, the nurse managers themselves were not directly involved in the decision-making processes. For instance, the decision to dedicate entire clinics (and which clinics) to COVID-19 crisis response work came from the government and higher-level municipal management. Decisions regarding the necessary amount and effective use of nursing staff resources were also made at a higher management level. The nurse managers spoke of how they were solely involved in implementing these decisions and leading their staff in the process of change. This role represents only half of crisis management, which as defined by the BSI (2014), is the implementation and development of capabilities.

Though the focus within the interviews was mostly on technical features of capacity development, Morgan (2013) states that human focused capabilities are just as important to the whole of operational capacity. Human-focused capacity development can be seen in areas of

staff recruitment, for instance, where nurse managers invested time into dealing with the individual concerns of their staff. This form of capacity development has become increasingly important to future health care capacity as respondents defined the single most important issue they face now, to be the motivation of their nursing staff.

Effective human focused capacity development also includes the informing and training of staff (WHO 2021b). For example, the WHO (2014, 2017b) states that training staff to recognize possible ARI cases is key to effective crisis response work during ARI health events. Only one respondent mentioned that they had trained their staff prior to COVID-9 work on relevant issues concerning caring for ARI patients, including recapping on resuscitation and non-invasive ventilation. Two respondents firmly informed the author that they had no such trainings for their nursing staff and one respondent was indifferent to the issue. As an interesting observation made by the author, the respondent who shared that their nurses had received ARI training also had their nurses working independently from the beginning of the crisis. The same respondent also shared that her COVID-19 care site had experienced more physician shortages as opposed to nurse shortages. Independently working nurses can lessen physicians' patient load within Finnish PHC, as under normal circumstances, a total of 28% of acute appointments are held by nurses alone (Lehtomäki 2009). This being the case, it would seem logical to assume that investing in relevant training of nurses as a form of capacity development for health care crises ultimately increases nurses' capabilities. This potentially lessens the burden of crisis response work for other health care professionals, such as physicians. So, how relevant do nurse managers and decision-makers consider such trainings to be within capacity development for ARI related crisis response work?

Though only one respondent told of ARI training before COVID-19 care site work began, all respondents mentioned that new staff receive comprehensive onboarding. All the respondents also mentioned that at some point, transfer to another PHC clinic was made possible for their nurses. Some of the nurse managers of COVID-19 care sites actively rotated staff by temporarily transferring a few of their own nurses to other PHC clinics in return for a few of their nurses. One respondent said that nurses new to the COVID-19 care sites receive a week of onboarding, meaning that they work together with an experienced nurse. From the author's experience, the onboarding to the COVID-19 care site work was minimal at best, due to lack of staff resources and a clear onboarding agenda. It can be inferred that if a greater number of staff know how to work at COVID-19 care sites, surge capacity for future epidemic waves is not restricted or limited by staff orientation.

A key technical feature of capacity development for crisis response work within health care is defined by Madad et al. (2020) to be in organizing of staff resources. The state of flux experienced by the COVID-19 nurse managers reflects upon this, as ultimately, the state of flux is largely caused by the changes made to staff resources. Changing nurses' roles within COVID-

19 care sites were decisions made by higher management as to the most effective use of nursing staff resources. Changes made to nurses' roles were significant in a couple of the COVID-19 care sites. One COVID-19 care site's nurses were essentially working as they had before, independently with a physician available for low-threshold consultation. In another, nurses were working in background supportive roles and were not involved in face-to-face interactions with patients. In the third COVID-19 care site, nurses functioned as physicians' scribes and assistants. The author questions here that can a nurse be expected to be able to accurately and reliably document on behalf of a physician, and if not, must the physician then review the documentation made by the nurse under their name, and if so, how much time is ultimately saved with this set-up? This set-up also led to the dilemma of disrupted working patterns when nursing shortages surpassed the needs of physicians. Physicians then teamed up and worked together, which while is an exemplary display of adaptability, flexibility, and collegial support, is not an effective use of limited resources.

One ambiguous aspect to capacity development was in the apparent (in)equal distribution of the burden of COVID-19 response work. This statement does not, however, reflect the allocation of nursing staff resources within other PHC clinics. One respondent mentioned that contact tracing and COVID-19 testing were aspects of crisis response work that required staff resources, which in her opinion was the reason for her experience of nurse shortages. All regular PHC clinics referred all patients with possible COVID-19 symptoms to COVID-19 cares sites, therefore, possibly lessening their patient load. Then, one nurse manager told of how their regular PHC services were delegated to the three geographically closest clinics. According to this statement, only around one third of the city's PHC clinics were then directly involved with COVID-19 crisis response work. The other respondents mentioned that their clinics' PHC services were provided throughout the cities' PHC clinics, which ultimately may still burden the geographically closer clinics but gives the option of dispersing burden more equally. One respondent said that this ambiguous delegation of PHC responsibility though, may act as a barrier to seeking treatment.

The IoM (2010) states, changes to standards of care are sometimes made in times of crises in order to develop capacity. The WHO (2021e) recommended postponing elective and non-essential procedures as needed for surge capacity development as well. The changes made to the provision of PHC services can also be viewed from the perspective of substitution IPC measures, as ultimately the goal is to control the risk of transmission by substituting it for the risks associated with the changes made to the provision of PHC services. The longevity of the crisis should be considered when substituting risks and the BSI (2014) warns, if crisis recovery efforts are insufficient, a new crisis can be triggered. As the provision of non-essential PHC services decline and limited resources are still highly focused on COVID-19 crisis response work, crisis recovery work becomes increasingly challenging. According to the respondents, treatment queues are growing exponentially, and they were genuinely concerned for their

regular patients. Rissanen et al. (2020) support this view and state that changes made to services have decreased provision of health care for non-communicable diseases, which may burden the health care system unforeseeably.

Primary health care then considers both the proximity and equitable distribution of health care services according to the needs of individuals and communities, and each municipality in Finland is responsible for providing access to health care for its citizens in accordance with their needs (WHO and UNICEF 2018, Finland 2010). From the author's experience, the concentration of COVID-19 related care into one facility within a municipality meant that patients from throughout the municipality travel to the one dedicated COVID-19 care site for health care whenever they are experiencing possible COVID-19 symptoms, even as a secondary issue. This was seen as a problem, for instance, in cases where a patient would need to travel to the COVID-19 care site from areas of the municipality which did not have direct lines of public transit to the site. In these instances, the equitable distribution of health care services was questionable. The respondents spoke of how they were attempting to organize the return of regular PHC services to their local communities. One respondent however, mentioned that they already provided PHC services on the second floor of their facilities, which did not have elevator access. At what point do COVID-19 care sites resume normal operations, especially considering the longevity of the crisis?

There are other ways of organizing COVID-19 response work within the PHC settings though. For instance, the innovative and proactive approach used by one Massachusetts hospital-based PHC clinic reduced the burden of COVID-19 on both PHC and emergency services (Blazey-Martin et al. 2020). Thus, eliminating or minimizing the transmission risk from confirmed COVID-19 cases visiting health care facilities. Is the current method of dedicating COVID-19 care sites within PHC the best alternative, or should other methods be seriously considered?

6.2   Infection prevention in COVID-19 care sites

Infection prevention and the measures taken to prevent infections produced the largest set of data. The data related to this main theme was strewn throughout the interview, as it was present in every topic in some way. One respondent defined the aim of COVID-19 care sites, in accordance with the STM's (2020b) definition, to be to effectively isolate symptomatic patients from other patients within health care settings. The COVID-19 care sites of Finland care for all patients with possible COVID-19 symptoms, also those who suffer from possible COVID-19 symptoms as a secondary issue. In this way, possible COVID-19 transmission risk is all but eliminated from other PHC services.

The HOCI and EMG (2021) defined transmission risk management to be the mitigation of transmission risk to as low as reasonably possible. A hierarchy of controls should be used to

identify relevant interventions within hierarchies (in descending order) of elimination, substi-tution, engineering, administrative, and PPE controls. Elimination controls are the most ef-fective way to control risk. (HOCI and EMG 2021.) Elimination is defined by Khan (2020) to be the effective control of the source of the hazard and specifically in terms of COVID-19, to be in isolating cases and suspect cases. Using this definition of elimination controls within the context of COVID-19 means that COVID-19 care sites are an elimination control measure and therefore, effective in managing transmission risk within the health care setting overall. From the author's experience however, symptomatic patients were traveling for long distances on public transit to and from the COVID-19 care site, sometimes looping through the center of the Helsinki to reach it. This raises questions as to whether the elimination of the transmis-sion risk for other PHC patients through the dedication of COVID-19 care sites actually trans-fers the transmission risk to other populations. However, because COVID-19 care sites serve all patients with possible COVID-19 symptoms and the majority of self-reported COVID-19 symptoms requiring urgent care are not then confirmed as COVID-19 cases (see figure 1), it can be assumed that a majority of patients seen at COVID-19 care sites are not COVID-19 posi-tive. According to the data produced by the two interviews of this study, implemented trans-mission risk management controls within COVID-19 care sites varied. Thus, subjecting possibly COVID-19 negative patients of COVID-19 care sites to varying levels of transmission risk within the different care sites.

Engineering controls are the third hierarchy and is defined by the NIOSH (2015) to be controls that remove or reduce risk at its source. Dehghani et al. (2020) defined the most important engineering control to be in improved ventilation and physical barriers, while the WHO (2021e) defined it to be in maintaining physical distance. Only one respondent mentioned utilizing an air purifier in exam rooms as an IPC measure but she at the same time questioned the effectiveness of it, stating that it may have only been helpful in increasing feelings of safety among staff. The other respondent in the interview did not comment or respond to this. Not one respondent mentioned the utilization of physical barriers as an IPC measure, though from the author's personal experience, at least one COVID-19 care site had one physi-cal barrier between the triage nurses at the door and the incoming patients.

All respondents mentioned complying with the government's guidelines on physical distanc-ing, saying that chairs within waiting areas and break rooms were arranged to accommodate for maintaining distance between people. While physical distancing measures were imple-mented by the strategic placement of chairs, only two COVID-19 care sites had strategic plan-ning of appointments, which can control the number of people within the facility at any given point and ensure sufficient space for the accommodation of physical distance. Two of the COVID-19 care sites had appointments available for patients, while two operated as walk-in only clinics. One respondent mentioned that they had patients waiting outside at one point for up to an hour before being allowed into the facility itself. It was unclear as to what the

specifics were in relation to this set-up. Blazey-Martin et al. (2020) state that a systematic need for care assessment before patients enter health care facilities lessened potential exposure of HCWs. While walk-in clinics lessen the burden of phone calls to the clinics, patients assessing their own need for care can result in visits to the clinic that could have been otherwise addressed through telecommunication.

Patient placement was considered to be a critical aspect to infection prevention as all respondents mentioned how nurses were stationed at the entrances of COVID-19 care sites to direct patients to their respective waiting areas. One respondent told of how they see all confirmed COVID-19 cases in one exam room. It was unclear though if the confirmed cases were waiting in separate spaces from other patients. Another respondent mentioned that confirmed COVID-19 cases were directed to wait in a separate enclosed space but are then ushered to the exam room in which they will be seen, meaning, that they are being seen in the same rooms as other patients. One COVID-19 care site had separated their waiting room into two parts: one side for patients over 70 years old and the other for patients younger than 70 years old. While the initial idea behind this was to protect vulnerable populations, it does not protect the older patients from being exposed to one another, and potentially COVID-19. This separation was done before COVID-19 vaccinations began.

Out of all of the hierarchies of control, administrative controls were discussed within the interviews the most, perhaps because the respondents were nurse managers and therefore, actively involved in implementing these controls. Administrative controls are defined by Dehghani et al. (2020) to be controls that change the way in which work is done to reduce or eliminate transmission risk, for example, organizing staff meetings over telecommunication. Some administrative controls mentioned in the interviews were the way in which staff were scheduled to avoid bottlenecks, organizing the cleaning and restocking of rooms, limiting patient time and movement within the facilities through changes made to HCW roles, planning lunch breaks and meetings to accommodate for gathering restrictions, changes to sick leave protocols and occupational health services. Systematic syndromic surveillance of HCWs working in close contact with COVID-19 is supported by literature (FHRT 2020; Wee et al. 2020, WHO??). At-the-door screening of patients was performed by nurses but screening of HCWs was not mentioned by any of the respondents. From the author's experience, syndromic surveillance of HCWs was not utilized as an IPC measure in one COVID-19 care site. Granted, all but one respondent firmly denied having any confirmed nosocomial COVID-19 transmissions.

Eliminating transmission risk by means of administrative controls can also be done effectively by eliminating the need for face-to-to-face contact between HCWs and between HCWs and their patients, because there is no COVID-19 transmission risk over telecommunication. Digital health care services were developed quicky, as experienced by the respondents. One re-

spondent said that these new services will continue to be used in the future as well to aide with crisis recovery work. Most respondents mentioned that they had developed systems in which nurses were able to work from home on occasion. According to one respondent, this also helped with staffing shortages caused by the low threshold sick leave that COVID-19 instigated, as nurses who were experiencing mild symptoms could work from home as needed. One interview included discussion around the lack of available technological resources, such as municipal computers, which limits the possibility of working from home when it would otherwise be possible. One nurse manager said that she had more nurses who would be willing and able to work from home than there were computers available. As an interesting side observation, this was the same respondent who mentioned that they also did not have enough space in their facility for the number of nurses that they would ultimately need and that already, many nurses were sharing workspace with colleagues.

Finally, PPE is the last control in the hierarchy of controls for risk management. It is also the least effective as it depends largely upon human behavior. (HOCI and EMG 2021.) The nurse managers, for example, all spoke of how much effort it took to stay up to date on the newest IPC and PPE guidelines. According to the respondents, their staff were also responsible for receiving and implementing new guidelines as they communicate them. One respondent spoke of the changes that happened with mask guidelines saying that in the beginning they were changing them between every patient as before, then they were instructed to change them after seeing a few patients, and that the time of the interview they were wearing the same mask for as long as they did not need to remove it. All respondents spoke of how there were PPE shortages in the beginning of the crisis, but none elaborated upon how that may have effected PPE usage and guidelines. In addressing fears related to the correct use of PPE, Wong et al. (2020) suggest peer supervision of donning and doffing of PPE. It is unclear as to whether the COVID-19 care sites implemented this practice, as not one respondent mentioned it as an infection prevention measure. They also did not mention hand hygiene though, which is not say that it is not practiced.

There were different ways of utilizing PPE, but it was not entirely clear from the interview results as to how PPE was used. As mentioned above, the author was able to work at one of the COVID-19 care sites for two months after this study was conducted. From the author's experience, HCWs were using a surgical cap, surgical mask, visor, waterproof long-sleeved gown, and gloves when coming into close contact with patients. The HCWs that may have been in the same room but were at a distance from the patient wore only a surgical mask. The surgical cap, visor and gown were removed between patients and then reused for a few patients. Gloves were naturally single use.

As the WHO (2017a) states, in order to combat future threats to global health in the form of antibiotic resistant bacteria, increasing and standardizing IPC practices is critical. The COVID-

19 health care crisis has provided the global community with an excellent platform for increasing awareness and diligence in IPC measures (Campbell 2020). Discrepancies on IPC standards were witnessed among the respondents' experiences and between the overall results of this study, literature, and the author's firsthand experiences within a COVID-19 care site. This goes to show that our global health efforts in standardizing IPC practices must begin within our local communities.

6.3   Motivating nursing staff for COVID-19 crisis response and recovery work

The willingness of HCWs to report to work during epidemics is an important aspect of preparedness and operational capacity must consider human-focused features in addition to the technical (Devnani 2012, Morgan 2013). Behavior, in part and as defined by Maslow (1943), is determined by motivation. Motivation is then largely determined by both the gratification and/or deprivation of individual needs, depicted using a hierarchy of needs (Figure 8). Motivation was described by multiple respondents to currently be the single biggest task of COVID-19 care site nurse managers. Respondents were increasingly concerned for the wellbeing and motivation of staff in relation to the COVID-19 crisis response and recovery work.

Utilizing Maslow's hierarchy of needs, Wong et al. (2020) list both individual and administrative interventions that can be used to promote the mental health of COVID-19 HCWs. If motivation were to be addressed according to the hierarchy of needs, it would begin with gratifying the physiological needs of COVID-19 HCWs. For example, working in PPE can be dehydrating so administration could lessen the physical burden of working in PPE by providing refreshments. One respondent told of how they provided lunch for their COVID-19 HCWs. The other respondent in the interview seemed to really appreciate this idea. She asked her colleague for more information on how this was arranged in practical financial terms, to which the answer was vague. This aspect of motivation is currently being left up to pharmaceutical companies and grateful patients, as another respondent said that staff are motivated by occasionally receiving cakes from patients and something small to eat left over from pharmaceutical company drug presentations. The direct quote (pp 63) related to the benefit of having pharmaceutical companies serving food was that "nurses too get something small to eat". From the author's insider knowledge of the health care work culture within Finland and from her experience working at a COVID-19 care site, drug representatives serve the physicians and nurses receive mostly occasional leftovers from these provisions.

Safety needs are the second tier of motivation on the hierarchy and are defined by Wong et al (2020) to be related to the fear of COVID-19 infection and/or the possible long term physical and/or financial effects of falling ill. According to all the respondents, there was a lot of fear and uncertainty related to COVID-19 especially at the beginning of the crisis. Respondents felt responsible for securing the safety of their staff in relation to infection prevention. The dis-

cussions that took place between the respondents reflected upon the emotional burden that was caused by the shortages of PPE in the spring of 2020, both to the nurse managers as well as to their staff. The THEY nurses' union published an ethical guideline in December 2020 related to employee rights and responsibilities, as well as safety related COVID-19 work, in which they answered frequently asked questions ranging from masks to vaccines. The ANA (2020b) clearly states in their COVID-19 ethical guideline that the nursing profession does not require heroic action, nor should any nurse feel the need to prove their value through putting themselves at great personal risk. The mangers understood this, as they made comments to the fact that if they should not have had enough PPE for their nurses, their nurses would also not have been able to perform tasks related to COVID-19 crisis response work.

Risk management is a continuous process which includes continuous risk analysis and the monitoring of control measures (Rout and Sikdar 2017). Including staff in discussions of risk analysis and strategies is important for cultivating feelings of safety (Wong et al. 2020). As the epidemic continues and evidence for practice continues to emerge, it is important to consider the emerging evidence in decision-making. The NHS Leadership Academy (2013) defined evaluating information to be an essential dimension to healthcare leadership. Nurse managers spoke of how the burden of continuously changing IPC guidelines caused fear and uncertainty in their staff as well. One respondent said that she practiced clear and simple communication to calm the fears of her staff during the most uncertain times. One interview included discussion on how the nurse managers had included their staff in strategizing. Both respondents said too that the best ideas come from their staff too and that they openly consider and implement good strategies. This is also in line with Kouzes and Posner's (2009) best practices' fourth principle, enabling action.

The nurse managers did not have extra resources to use in the motivation of staff, as was apparent through inference and one direct statement. They relied upon the self-motivating attributes of their nursing team, utilizing their social needs in motivation. Staff would motivate one another, and the nurse managers spoke highly of this capability. The crisis response work created an environment of strengthened team spirit in the beginning of the crisis, and this was a big factor in motivation. The respondents also mentioned how they had organized debriefing sessions for their staff, in which nurses were able to talk about their experiences in a controlled environment with their colleagues. All respondents mentioned enhancing their availability to their staff as well, with one respondent saying that it was important for staff to know that they are welcome to discuss any concerns or engage in casual conversation with their manager whenever they feel the need to.

After the first epidemic wave and after the Hybrid strategy was implemented, the COVID-19 front in Finland was quiet over the summer of 2020. According to the respondents, their staff assumed that COVID-19 crisis response work would be ending after returning from their sum-

mer vacations. When it continued, the nurse managers saw a dip in work motivation. One respondent told of how she quickly reacted to the lowered motivation levels by giving respondents the opportunity to transfer elsewhere, which nobody took her up on. Another respondent did transfer staff and recruited temporary replacements from other PHC clinics. This strategy would appear to be according to a certain level of transactional leadership, in that if staff do not remain motivated, they are transferred away from their familiar team. The reward was the benefit of continuing to work within one's familiar social environment and the respondent therefore recognized the impact of both the deprivation and gratification of individual social needs in motivation.

Transactional leadership is an effective leadership style for crisis management, as it clearly defines expectations (Richards 2020). Elements of transactional leadership can also enhance transformational leadership, which is seen by Vesterinen et al. 2012) to be the most effective style for leadership within nursing today. The WHO (2016) states that crisis response workers are to receive due compensation. Financial bonuses for HCWs involved in crisis response work is supported by Devnani (2012) also, who lists it as a factor in motivating staff to work during epidemics. As has been previously mentioned, the nurse managers did not have extra resources available for the motivation of staff. In contrast, many EU member states have paid their COVID-19 HCWs bonuses ranging from 500-1500 euros of tax-free income (Koivuniemi 2020). After the data was collected for this study and before its publication, the City of Helsinki (2021) announced that they had approved a 7,6-million-euro budget for culture- and sport gift certificates for COVID-19 workers. The main aim is to rejuvenate the culture- and sport sector by providing COVID-19 HCWs with an opportunity to enjoy themselves after their year of hard work. The maximum worth of these certificates is to be 200 euros. (City of Helsinki 2021.) Other forms of further compensation of COVID-19 HCWs have not been made public, from the author's understanding.

If the questionnaire results from October 2020 truly reflect the state of Finnish nurses' commitment to the profession, the situation is dire (Finnish Nurses' Union 2020). This would mean that over half of Finnish nurses are considering leaving the field. Many other nursing platforms too are concerned for the wellbeing and motivation of nurses globally in relation to COVID-19 and beyond. The International Nursing Council (ICN 2021) predicts that a mass migration of nurses from the field of nursing will occur as a COVID effect. Now is the time for policy makers and decision-makers to open a line of communication on HCW motivation and compensation. What needs do nurses have that are not being met? The quality of future health care systems grossly depends upon the continued motivation of its nurses.

The questionnaire conducted by the Finnish Nurses' Union (2020) in relation to COVID-19 response work indicated that nurse managers would have appreciated more decision-making responsibilities within their area of expertise. Neither interview included discussion about

how nurse managers may have done things differently had they been more involved throughout the process of capacity development.

The nurse managers all spoke of how they were, together with their staff, ethically burdened by the overwhelmed telephone services. This was seen as being related to crisis recovery work, as many patients contacting their PHC providers had complex situations in which their health care needs may not have been met during the beginning of the crisis. Nurses now carry the heavy burden of completing ethically complex need-for-care assessments for patients with many neglected issues. They are once again at the frontline; now facing the society's health care inequities and disparities head on. Wong et al. (2020) suggest facilitating ethical deliberation teams available for consultation in response to the burden of COVID-19 crisis response work. The ANA (2020b) has also published an ethical guideline specific to COVID-19 crisis response work, which addresses some of these issues and stresses the importance of caring for the caregiver too. Literature supports supporting staff in their ethical deliberations during COVID-19 response work. As respondents were more worried at the time of the interviews about the ethical burden of crisis recovery work, as opposed to crisis response work, a clear guideline for ethical decision-making in crisis recovery work is needed. Nurse managers need more resources and tools to support nurses in this massive responsibility.

Respondents were also worried about how their staff would continue to be motivated after crisis response work comes to an end. According to Kouzes and Posner (2009), in order for action to be enabled, a clear vision for the future must be imagined and communicated. At the same time, the NHS Leadership Academy (2013) lists inspiring a shared purpose as the first dimension in their leadership model. At the time of the interviews, the respondents were not aware of recovery plans for PHC services. What are the expectations, standards, and vision for crisis recovery work?

6.4   Ethical considerations

There are several ethical considerations regarding qualitative research and each individual researcher is responsible for managing them. These issues include respondent confidentiality and anonymity, informed consent, issues regarding recruitment and research permissions, as well as formal ethical regulations. (Kara and Pickering 2017.) According to Orb, Eisenhauer and Wynaden (2001), ethics in qualitative research also include appropriate research design and methodology, funding, reporting, researcher and respondent relationships and researchers' subjective interpretations of the data. Research ethics should also consider the three pillars of autonomy, beneficence, and justice. (Orb et al. 2001.)

Respondent anonymity is protected through the GDPR, for which specifics can be found under methodology. All respondents signed informed consent letters (appendices 3 and 4) and were aware of the voluntary nature of participation. Each municipality gave the author permission

to conduct the research with their employees. Interaction between the researcher and respondents reflects a power relationship. The author of this study is a former employee of one of the clinics and has done some shifts at another. The work history of the author also includes multiple other PHC clinics within the capital area, therefore giving the author a rich knowledge of context. It may, however, cause some ethical issues in that respondents may have felt coerced into participating due to the connection.

6.4.1 Trustworthiness of the results

In order for qualitative research to produce trustworthy results, it must be conducted methodically, especially during the analysis of the data. Thematic analysis has many advantages. It is a flexible approach that can be modified as needed, giving detailed and complex descriptions of data. It is useful in analyzing different perspectives, producing unexpected results, summarizing data into key points, and accentuating similarities and differences within the data. The transparency of an analysis process is related to the trustworthiness of the research. Communicating clearly about the analysis process makes evaluating the trustworthiness of the study easier, because when methods of analysis are disclosed, the reader can determine the credibility of the results produced. It is each individual researcher's responsibility to consider trustworthiness in their research. Trustworthiness criteria for thematic analysis can be defined using concepts of credibility, transferability, dependability, and confirmability. (Nowell et al. 2017.)

Credibility is defined by the readers recognition of the experiences portrayed by the researcher as it shows how well the researcher has been able to represent the respondents' views. Techniques that can be utilized are prolonged engagement, triangulation within data collection and between researchers, and testing the results with respondents. (Nowell et al. 2017.) Prolonged engagement was not practical considering the crisis. This also meant that the interview was not piloted. The aim of an IAR is to use minimal resources to quickly answer questions related to ongoing crisis response efforts, so ultimately, the engagement period was minimal and may have affected the credibility of the results. It is also unreasonable to attempt to gain access to all relevant data during two hour-long pair interviews. Respondent saturation was achieved during each interview, however, so the respondents were not left feeling as though they would have had more to add. Collaboration and validation, which took place throughout the data analysis process, prolonged the engagement period, and gave respondents further opportunity to influence the results of this study. There were some discrepancies, on which the author collaborated and negotiated with the respondents on the correct interpretation, which are outlined

Researcher triangulation was not possible, as there were no third parties involved in the data analysis and there is only one author. Triangulation within data collection was seen in how

the two nurse managers employed by the city of Helsinki were paired with nurse managers from either Espoo or Vantaa. This was done to promote more spontaneous discussion among respondents, as the author suspected that nurse managers employed by different municipalities would have had different experiences. This triangulation was seen to have instigated spontaneous commenting on how individual respondents, or their municipal decision-makers, might have done things differently. This in turn lessened the need for the author's input during the interviews and ultimately her influence on the collected data.

Transferability is defined by how well the results can be transferred to other contexts. As the researcher cannot know the context of the possible transfer site, thick descriptions that can be utilized in determining the transferability of the results. Dependability is seen in the clearly communicated and logical research process. This ensures that readers can evaluate the dependability of the study. Confirmability is determined by the researcher's ability to show how their interpretations and results are derived from the data. This happens through achieving credibility, transferability, and dependability. Including the reasons for theoretical, methodological, and analytical decisions aids in achieving trustworthy results and means that another researcher in the same context could make comparable conclusions given the same data. All aspects of confirmability, and ultimately trustworthiness, were considered throughout the study. Thick descriptions as well as reasoning for decisions made are included throughout the report to aid the reader in determining the trustworthiness of the study.

Limitations related to this study are related to the fast tempo of the prolonged COVID-19 crisis. The results of this thesis were relevant to the time and context of the interviews. The crisis continues to evolve, and situations change quickly. Though respondent saturation appeared to be reached during each interview, each interview was approximately an hour long, during which it would have been impossible to cover all related aspects. The initial intent was to interview respondents during the summer of 2020. This would have provided a more condense contextual background related to timeframe of the study. Research approval took longer than initially expected, as cities were conserving resources due to the crisis. After approval was given, the author sent the informed consent letters to the respondents. Two respondents replied quickly, while two took longer to respond. The author did not want to pressure respondents about participation, which resulted in a 10-week gap between the two interviews. During this 10-week period, the COVID-19 vaccinations became a reality in Finland and mutated virus forms were beginning to circulate globally. One respondent from the second interview mentioned these two issues in passing but the contextual difference between the two interviews was not seen to be significant.

6.4.2 Language barrier considerations

A researcher who is fluent in the local language of their subjects benefits from cross-language research opportunities that are not available to other researchers (Temple and Young 2004). The author is a native English speaker who is fluent in Finnish, having lived in Finland for over 12 years and having Finnish spoken at home as a child. As a fair indicator of the author's Finnish language skills, Finnish readers can assess the Finnish versions of both the initial email and informed consent letter (Appendices 1 and 3). Both the email and the letter were written by the author alone, with outside help received only on the line concerning direct quotation usage in the informed consent letter. Also, refer to the English versions of to assess the author's capabilities in translating from Finnish to English.

Conducting interviews and analyzing data in Finnish as a non-native speaker may affect the results of the study, though to what degree would be speculation. The author began the interviews by introducing herself to the respondents as a native English speaker with fluent Finnish language skills. This was to ensure that any language discrepancies, which may have occurred on behalf of the author, would not cause doubt or confusion in the respondents during the interview. The author did not notice any direct misunderstandings or communication barriers in either interview, but her non-native Finnish language skills may have been reflected in the wording of her questions, vocabulary used, and accent. Temple and Young (2004) state that differences between the represented and representee may act as both a stimulator and/or a barrier to communication. To what degree these differences may have influenced the results is unclear.

Kvale (1996) states that the knowledge produced by an interview is linguistic, therefore an analysis of the language should be included in the analysis process. According to Temple and Young (2004), if the researcher is fluent in the local language, she can translate data herself. In the case that a researcher was to function as both researcher and translator, an analysis of meaning naturally occurs during the translation process, which can aide the researcher in their analysis of the data. This does not necessarily correlate to mean that results produced by this form are truer, but simply that translation can be an extension of the data analysis process. (Temple and Young 2004.) As a non-native Finnish speaker working as a nurse in Finland, the author considers herself to be skilled in analyzing communication in Finnish, both from her own usage of the language to analyzing spoken and written Finnish within the health care context. Therefore, including an assessment of language in the analysis process can be argued to have been a naturally occurring phenomenon and the language barrier could be viewed as a productive inconvenience to the data analysis process.

Temple and Young (2004) state that communities perceive other languages as having different statuses and that the power relationship between languages affects the way in which we de-

termine meaning. The English language is often considered as the baseline. To address issues of possible bias due to the power relationship between the two languages, the translation from Finnish to English was delayed for as long as possible. This also allowed for the respondents to influence and validate results in their own native language. This delay in translation may have affected the results, as this meant that the author analyzed the data in Finnish. Upon first familiarizing herself with the data, the author did have some difficulty in understanding some of the language used in the interview, which was accentuated by the transcription process. For example, the use of the word "rokottanut" in the context of burden was entirely new to the author. This was resolved by asking a native Finnish colleague a general question referring to the possible use of the term in the implied context. Both interview recordings had a few instances too, in which respondents spoke over each other or the sound was otherwise muffled. In these instances, the author was not able to make out what was said. It is unclear as to whether this was due to the language barrier though.

Translating the results of the study was a process which included much deliberation. For instance, the term "muutostila" caused some ambiguity. It does not mean constant change, as the author was quick to translate it to at first, but more of a state of change. The author compared the state to be similar to, for instance, when facilities are being remodeled. The state in which operations continue is temporarily changed but constant for the duration of the remodeling. From this comparison came the word "flux". When the author felt stuck, an online Finnish dictionary was used to translate especially meaningful words into English. This was not because the author did not know the meaning of the words, but it was used to get a wider range of appropriate vocabulary. Then, an online thesaurus service was used to access an even larger English terminology pool, which helped with the more accurate translation of results.

6.4.3   Benefits and possible harm

Orb et al. (2001) state that the benefits and possible harms from interviewing must be addressed, including the three pillars of autonomy, beneficence, and justice. The author's intent was to shed light onto the crisis response efforts of respondents and their nursing staff. Possible benefits of participation in an interview are similar to those of debriefing. It is possible that respondents experience catharsis and empowerment as a result. Hirsjärvi and Hurme (2008) state that an interview provides a platform through which respondents can share their experiences in a way that accentuates points that they themselves consider important. The interview also provided a platform for peer support through the sharing of experiences with a colleague. All respondents made comments alluding to this aspect of the experience.

The study required time and energy of nurse managers involved in COVID-19 crisis response work, and the cities made it clear that minimal resources will be allotted for research during

the crisis. To address this, this study included only the most relevant informants, which were the four nurse managers of the COVID-19 care sites in the greater Helsinki area. The interviews were scheduled according to schedules of the respondents and the author did not pressure respondents about any aspect of participation.

Kvale (1996, 117) states that the consequences of the research must also be assessed from the perspective of how the information might be used in a broader sense, and perhaps even on the level of political decision-making. Benefits of the study on a larger scale include a new perspective on COVID-19 crisis response work. This information can potentially be used by other health care organizations in weighing the benefits and costs of their own crisis response efforts, taking into consideration the transferability of the results within the context of the lived situation here in Finland. As the ECDC (2020) states, IARs can also benefit the outcome of on-going crisis response work. The information may also be utilized as a base for constructive criticism and further development of the Finnish COVID-19 crisis response work within PHC. Possible harm may be in the not so constructive criticism of the crisis response work and possible singling out of respondents. The author sent each respondent a document of their own direct quotes that the author wanted to use in this report. All direct quotes used have been shared with the consent of the corresponding respondent to lessen the possible harm caused from the possible identification of respondents' contributions.

6.4.4 Conflicts of interest

The author hereby states that there are no direct conflicts of interest. No funding has been applied for or awarded in respect to this study. Each municipality assessed their ability to support the study with the respondents' time when deciding upon whether to grant the author the permission to conduct the interviews with their own COVID-19 care site nurse managers. The fact that the author had been employed by one of the respondents in the past, may be seen as a conflict of interest, but at the time of the interviews she was not employed.

7 Conclusion

Primary health care is the front-line defense for epidemic response work at the community level. The purpose of this study was to describe the early experiences of nurse managers in PHC clinics in the greater Helsinki area dedicated to caring for patients with possible COVID-19 symptoms during the COVID-19 epidemic. All four nurse managers of COVID-19 care sites within the defined area, voluntarily participated in the study. The results indicate the complex nature of COVID-19 crisis response work within PHC and suggest that PHC has been immeasurably burdened by COVID-19, the extent of which is yet unknown. Four main themes

emerged from the interviews, state of flux, infection prevention, management of staff and overall experiences.

Capacity development within the COVID-19 care sites was described to be a quick and hectic process. Nurse managers had a few days' time to develop COVID-19 care site services for their communities, which included both technical and human focused capacities. This process led to a state of flux, which has lasted over a year and continues to stress the provision of non-essential, yet necessary, PHC services. Nurse managers were worried about the health of their normal patients and for the wellbeing of their nurses. An ethical guideline for Finnish nurses specific to issues related to COVID-19 crisis recovery work, could lessen the ethical burden placed on nurses as they begin to face the tremendous treatment queues with limited health care services to offer.

Infection prevention was a large topic within both interviews, as the purpose of the COVID-19 care sites is to prevent infection. It has required creativity from the nurse managers as they have planned and orchestrated different systems for the practical implementation of IPC measures within their own COVID-19 care sites. As new evidence on COVID-19 infection prevention continues to emerge, nurse managers continue to ensure that their IPC measures adhere to the latest guidelines. There is a need for increasing and standardizing IPC practices globally and the COVID-19 health care crisis has provided a platform for this development in IPC. Discrepancies in IPC standards seen in this study suggest that our efforts to standardize IPC practices must begin within our local communities.

Leadership skills within COVID-19 care sites were accentuated and nurse managers spoke of how currently, their biggest job is in motivating their staff in the continued crisis response and recovery work. More support for nurse managers in motivating nursing staff is needed to mitigate the so-called COVID effect, which may result in a mass exodus of nurses from the profession. The author suggests further research into what motivational techniques work best for nurses and into the effectiveness of current motivational techniques, such as serving coffee cakes and vouchers.

Nurse managers of COVID-19 care sites spoke openly about their experiences during the interviews. They have stood in the face of fear and uncertainty and have led their staff through the beginning of an unprecedented global health crisis. They have been on the frontline of the Finnish crisis response work and appreciate the unique opportunity it has afforded them. There have been challenges to the work but overall, the mentality seemed to be of a fighting spirit. They were proud of what they had accomplished and have begun to turn their attention to recovery work. As many sources indicate, the COVID-19 crisis can be our best opportunity to develop our health care systems to be more resilient and to better address health care inequities. A good crisis recovery plan and effective leadership creates opportunities for

organizational development. A vision for crisis recovery work, as a goal towards which to aspire, is needed.

This study is significant in that it outlines the crisis response efforts within PHC in Finland's capital area. Crisis response efforts within PHC have been difficult to follow from the outside, as the focus has been in emergency and ICU level provincial health care services. This study gives a glimpse of how PHC organizations within Finland have responded to the crisis and can be used to critically analyze current methods. While the crisis continues to evolve, the results of this study may become irrelevant to the times. However, this study continues to provide an account of the initial crisis response work. This can be helpful when reviewing crisis response work and in preparing for future crises.

This report will be published in the Theseus database. Also, in approving the study, each city indicated that they would link the published final report to their website for visibility. Each respondent will receive a copy of the report as well. To further complete the aim of the study, which was to make the nurse managers' crisis response contributions known, a Finnish abstract will be submitted to the Finnish Nurses' Union for publishing on their website. In fulfilling the purposes of an In-Action Review, an English article will be written on the topic of the study and submitted to a relevant nursing journal.

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Figures

Tables

Appendices

Appendix 1: Initial contact by email in Finnish

Arvoisa koronakeskuksen osastonhoitajat!

Olen YAMK (Global Health and Crisis Management) opiskelija Laurea Ammattikorkeakoulusta. Ennen opiskelujeni alkua työskentelin (nimi) terveysasemalla sairaanhoitajana.

Teen opinnäytetyötäni liittyen koronakeskusten osastonhoitajien varhaiskokemuksiin. Tutkimuksen tarkoitus on kuvata pääkaupunkiseudun koronakeskusten osastonhoitajien varhaisia kokemuksia. Tavoitteena on tuoda perusterveydenhuollon pandemia-työ näkyväksi. Aineistoa tulen kerämään teemahaastattelumenetelmällä Skypen välityksellä. Teemahaastattelussa on määriteltyjä keskustelun teemoja ja teemojen alle on määritelty mahdollisia kysymyksiä, joita haastattelija voi käyttää synnyttämään keskustelua. Otan tutkimuskeen mukaan kaikki 4 pääkaupunkiseudun koronakeskusten osastonhoitajat. Haastattelut pyrin järjestämään 1-1,5 tunnin parihaastatteluina.

Tsekkaa tarkemmat tiedot liitteestä!

Olisitteko kiinnostuneita osallistumaan tutkimukseen? Olisin kyllä kiitollinen osallistumisestanne.

Käytännön asiat pyrin järjestämään siten, että mahdollisimman vähän haittaa tulee osallistumisesta.

Tehdään yhdessä perusterveydenhuollon kriisityö näkyväksi!

Mari Nevala

Appendix 2: Initial contact by email in English

Esteemed nurse managers of corona centers!

I am a Master's (Global Health and Crisis Management) student at Laurea University of Applied Sciences. Before my studies, I worked as a nurse at (name) primary health care clinic.

I am doing my thesis on the early experiences of corona center nurse managers. The purpose of the study is to describe the early experiences of the nurse managers of corona centers in the capital area. The aim is to make the primary health care pandemic work visible. I would be collecting data using thematic interviews over Skype. In thematic interviews, there are defined themes for discussion and defined questions under each theme, which can be used to create conversation as needed. I am including all 4 capital area corona center nurse managers. I aim to organize the interviews as 1-1,5 hour long pair interviews.

For further information, check out the attachment!

Would you be interested in participating in the study? I would be very grateful for your participation.

Practical arrangements will be made so as to cause the least possible harm from participation.

Let's make primary health care crisis response work visible together!

Mari Nevala

Appendix 3: Informed consent letter in Finnish

Arvoisat koronakeskusten osastonhoitajat!

Olen YAMK (Global Health and Crisis Management) opiskelija Laurea Ammattikorkeakoulusta. Teen lopputyötäni liittyen koronakeskusten varhaiskokemuksiin. Lopputyöni tarkoitus on kuvata koronakeskusten lähiesimiesten varhaisia kokemuksia koronavirustaudin (COVID-19) pandemian aikana. Otan pääkaupunkiseudun koronakeskusten osastonhoitajat mukaan tutkimukseen. Osallistuminen on täysin vapaaehtoista, koko tutkimuksen ajan.

Kokemuksia tulen keräämään teemahaastattelu menetelmällä. Teemahaastattelu on haastattelu tyyli, jossa haastattelija esittää tiettyjä teemoja, jotka pohjautuvat teoriaan ja näistä sitten keskustellaan vapaamuotoisesti. Tämä tyyli varmistaa sen, että kokemuksia tulee mahdollisimman hyvin kuvattua haastateltavan näkökulmasta. Pyrin järjestämään haastattelut noin 1-1,5 tunnin mittaisiksi parihaastatteluina. Haastattelut tehdään Skypen välityksellä ja niitä nauhoitetaan analyysia varten.

Vastaukset tulevat olemaan nimettömiä. Itse lopputyöni on englanniksi, ja käännän tulokset juuri ennen raportin kirjoittamista. Ennen käännöstä, pyydän teiltä vahvistusta tulosten oikeudesta. Näin tulette myös tietämään mitä annettua tietoa on käytetty, ja missä määrin, ennen julkaisua. Mikäli suoria lainauksia käytetään, lupa lainauksiin pyydetään erikseen. Lopputyöni tulee julkistettua Theseus tietokantaan. Artikkeli tutkimuksesta esitetään sopivalle kansainväliselle hoitotyön lehdelle.

Lopputyöni julkaisun jälkeen haastattelu aineisto hävitetään. Haastattelu aineistoa tullaan käsittelemään ainoastaan lopputyöntekijän toimesta; näin osallistujien anonymiteettiä tullaan suojelemaan ja salassapitovelvollisuutta kunnioittamaan. Vastaava lehtori saattaa tutkia koodattua aineistoa ja tutkimuksen prosessia, sekä auttaa käännöstehtävissä.

Maailman terveysjärjestö (WHO) on kehottanut maita jakamaan tietojaan ja kokemuksiaan COVID-19 pandemian hoidosta. Itse näen arvoa Suomen kokemuksien jakamisessa sekä kansallisesti että kansainvälisesti. Osallistumisenne olisi erityisen tärkeää ja olisin kiitollinen osallistumisestanne!

Teitä pyydän ystävällisesti osallistumaan lopputyöhöni!

Mari Nevala (mari.nevala@student.laurea.fi)

Haluan osallistua ja suostun antamaan haastattelussa antamani informaation lopputyössä käytettäväksi.
(allekirjoitus, nimen selvennys, ja päivämäärä)

Appendix 4: Informed consent letter in English

Dear nurse managers of COVID-19 care sites!

I am a YAMK (Global Health and Crisis Management) student from Laurea University of Applied Sciences. I am completing my thesis on the topic of early experiences of COVID-19 care sites. The purpose of my thesis is to describe the early experiences of the nurse managers of COVID-19 care sites during the COVID-19 epidemic. I am including the nurse managers of the four COVID-19 care sites in the greater Helsinki area in the study. Participation is voluntary throughout the course of the study.

Experiences will be collected using thematic interviews. Thematic interviewing is a style of interviewing where the interviewer presents certain themes, which are based on literature, for free form discussion. This style ensures that the experiences of the respondents are told from their own perspective. I will aim to arrange approximately 1-1,5 hour long pair interviews. The interviews will be held over Skype and the contents will be recorded for analysis.

All responses are anonymous. The thesis itself will be written in English, and I will translate the results just before writing the final report. Before translation, I will ask you for validation of the results. This also gives you an opportunity to know what information has been used before publishing. If direct quotes are used, permission will be sought separately. The thesis report will be published on the Theseus database. An article on the study will be submitted to a relevant Nursing journal.

After the publication of the thesis, the raw data from the interviews will be destroyed. The raw data will only be handled by the author to ensure anonymity and confidentiality of all respondents. The overseeing professor may examine the coded data and study process, as well as help with translation issues.

The World Health Organization (WHO) has encouraged countries to share knowledge and experiences of COVID-19 epidemic response work. I see value in sharing the Finnish experience both nationally and internationally. Your participation is extremely important, and I would appreciate your participation!

I respectfully request your participation in my thesis project!

Mari Nevala (mari.nevala@student.laurea.fi)

I would like to participate and allow for the use of information given during the interview in the thesis project (signature, name, date)

Appendix 5: Interview framework

Thematic Interview Framework

Date:

Time: to

Respondents:

Theme 1: Capacity development

- What innovative solutions have been identified and/or used to increase capacity?
- What is the surge capacity plan?
- How does increased testing capacity affect the work of the COVID-19 care sites?
- How is the continuation of primary health services ensured?
- What resources are needed and how are they coordinated?

Theme 2: Managing staff

- What do your staff need to stay motivated in the response work?
- What can be done to promote mental health and wellbeing in staff?
- What training has been implemented and what is there a need for?
- How have you communicated with your staff?

Theme 3: Infection Prevention

- What infection prevention measures are in place to prevent nosocomial outbreaks (transmission within healthcare environments)?
- What PPE is used by your staff and in what context?
- What does an average patient's care path look like?
- How are ill staff members monitored and managed?
- What is being reported and how?

Theme 4: Emerging issues

- What changes do you foresee for the COVID-19 care sites in relation to the hybrid strategy?
- What has been done to prepare for the predicted second epidemic wave?
- What do you see for the future of your primary health care clinic?

Theme 5: Overall experiences

- What are the main challenges to managing a COVID-19 care site?
- Do you have any last comments or suggestions?

Appendix 6: Questions used during each interview for themes 2 through 5

Second theme	First interview	Open and broad questions asked	The second themed was introduced broadly by saying "we have already discussed this topic some but let's move on to the second theme, which is management of staff. I'd like to hear about your management experiences as nurse managers at COVID-19 care sites."
		Clarifying questions asked	Were the staff then able to decide for themselves whether they would participate in the COVID-19 care site work or was that a decision that came from management? A you mentioned that morning and general meetings are still being held, who is involved in these meetings?
		Direct questions asked	What courses have been arranged and what has the need been? (Q4)
	Second interview	Open and broad questions asked	The second theme was introduced broadly by saying "Then we can move onto the second theme. The discussion so far has included some aspects of this theme but let's go deeper into it. The second theme is management of staff. What thoughts arise on this topic?"
		Clarifying questions asked	C, you mentioned that motivating staff has been challenging. How can staff be motivated?
Third theme	First interview	Open and broad questions asked	The third theme was introduced broadly by saying "if there is nothing more to say about the last topic, let's move on to the third theme, which we have also talked about some already and is infection prevention. How has infection prevention been considered in the work environment and patient care?"
		Clarifying questions asked	I am interested in knowing more about the disposable silverware; how did that idea come about? B, when A said that their waiting room is divided into two, where over elders sit on one side and the younger patients on the other, do you have something similar?
		Direct questions asked	In the spring we heard a lot about the shortages in PPE, how was this seen in your work, or was it? Have you had any nosocomial infections?
	Second Interview	Open and broad questions asked	The third theme was introduced broadly by saying "then we can move on to the third theme of infection prevention. What thoughts arise concerning this theme?"
		Repetition used	Yes, if (the idea) returns to you, say it then.
Fourth	First	Open and	The fourth theme was introduced broadly by saying "Let's move

theme	interview	broad questions asked	on then to the fourth theme, which is challenges of the future. B, you said that your COVID-19 care site will be operating as such at least until the end of May but what challenges do you see in the future for your own primary health care clinics?"
		Clarifying questions asked	What have you been able to do about staff motivation?
	Second Interview	Open and broad questions asked	The fourth theme was introduced broadly by saying "Sure, then challenges for the future. What are the challenges of the future?"
		Clarifying questions asked	D, you mentioned the challenges related to handling treatment queues, what do you think would help with that?
		Repetition used	C, while you were working on returning to the call, I asked D about what would help with the challenge of treatment queues and she said (…) What are your views on that?
Fifth theme	First interview	Open and broad questions asked	The fifth theme was introduced broadly be saying "you have yourselves introduced the final theme here, which is experiences as a whole. If you have anything to add or would like to say something further yet about your experiences as a whole (sic)".
	Second interview	Open and broad questions asked	The fifth theme was introduced broadly by saying "let's introduce the last theme here, which is experiences as a whole. How do you feel about the experience as a whole?"
		Clarifying question asked	So, if you had to describe the experience of managing a COVID-19 care site briefly, what was it like?