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THE ECONOMIC IMPACT OF COVID-19 ON THE FINNISH REGIONAL HEALTH CARE SERVICES

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1.Introduction

1.1. Overview of the Finnish social and health care system

Finland and its female-led government has been praised for its handling of Covid-19, with one of the lowest infection rates in Europe. Nevertheless, the rates of confirmed cases vary a lot across the country placing the Helsinki capital city area as the most infected region in the country (THL 2020). The so-called peripheral districts, on the contrary, have been able to keep the infection rates comparably low as of November 2020. In this report, we take a closer look at one peripheral hospital district in Finland, the East-Savo Hospital District, to discuss the economic impact of Covid-19 on the Finnish regional health care and social services. By looking at the economic impact of the pandemic from the regional and more precisely from the peripherical point of view, we bring forth both the national as well as the regional level assets and resilience factors that have been utilized during the crisis. To a certain extent, these factors have enabled peripheral communities to keep infection rates low and secure the function of the health and social care service infrastructure. In this report, we discuss particularly the role of well-operating social and healthcare infrastructure as a resilience factor against Covid-19 and in support of regional welfare. Gaining a good understanding of assets and resilience factors within peripheral communities is important for the analysis of impacts and for recommendations for the roadmap of future ways forward. A good understanding of regional assets and resilience factors can shift mindsets about peripheral living which is often characterized as “remote”, and lacking services and economic opportunities which push especially young people to move to more densely populated areas.

Finland is divided into twenty hospital districts for the purpose of providing specialized medical care. Every municipality belongs to one of the hospital districts. Each hospital district has at least one central hospital. The hospital district is responsible for the provision of hospital services. In addition, five of the hospitals in Finland are university hospitals providing highly specialized medical care. (EU Healthcare 2020.)

From the point of view of institutional structures, financing and aims, the Finnish social and health care system resembles other Nordic countries and the United Kingdom. In addition to the tax-funded public health care provision, in Finland there is a specific system of reimbursement of the cost of several private health services and pharmaceuticals by obligatory universal health insurance (Häkkinen and Lehto 2005). Under the current legislation and service system, social welfare and health care services are organized by municipalities and financed by state subsidies. Private companies also provide services alongside the public sector. In addition, Finland has a wide range of NGOs providing social welfare and health care services. The system can be referred to as ‘hybrid-like’. According to the Finnish Institute for Health and Welfare (2020) the productivity of Finnish hospitals is high compared with that of the other Nordic countries.

The shaping of the current system was highly influenced by the economic recession during the 1990s during which Finland was influenced by the “international wave of health care reforms” (Häkkinen and Lehto 2005, 80). There are several identified reforms, which have molded the current system into what it is today, such as state subsidy reform, deregulation, and the integration of health and social care (Häkkinen and Lehto 2005). These reforms have had a significant impact on the regional social and health care infrastructure.

In 1984, the state subsidy systems for health and social care services were merged into an integrated system in which health care services and social services are dealt within the same regulatory framework (Häkkinen and Lehto 2005). In 1993, the position of municipalities changed in accordance to a more extensive state subsidy system reform. In the system, state subsidies for health service operating costs have thereafter been non-earmarked lump sum grants, which are calculated prospectively by using a capitation formula. Thus, there are no earmarked grants directed at health or social care expenses from the government. From an international perspective, the Finnish system is unique; for even the smallest municipalities are responsible for taking financial responsibility for arranging the mandatory services. The aim was to give the municipalities more choice in arranging health services for their citizens efficiently.

According to studies, this reform opened a way for advancing deregulation. However, studies also state that the municipalities in Finland are economically much weaker than in most other OECD-countries. In addition, the role of municipalities is considered quite frail in influencing the health care providers such as the hospital district authorities. This can lead to conflicts between them, and also between municipalities as service purchasers and various other actors such as commercial service providers that have entered the market through private-public partnership (PPP) contracts (Häkkinen and Lehto 2005). The defining feature of deregulation was that municipalities were given a right to purchase services freely from public, non-profit, and private providers. In addition, contracting out existing public services was extended.

The current system together with the changing demographic scenarios has created a situation in which services have become centralized. The centralization may support economic productivity, but it also increases regional differences in service accessibility and employment. Therefore, there is a need to connect social and healthcare infrastructure solutions to other dimensions of regional planning (see Rehunen et al. 2016). Indeed, the current social and healthcare system has been a topic of politically heated discussion even before Covid-19. For some time, a legislative reform has been underway to shift the responsibility for health and social services and for rescue services from the local government level (municipalities) to the regional government level (counties), supplemented by private and third sector service providers. The pandemic has given a push to advance the reform that will, when implemented, bring regional actors to the center of service provision.

1.2. Covid-19 and political decision making in the Spring 2020

After political discussion and evaluation guided by the health care authorities and experts from the Finnish Institute for Health and Welfare (THL), the President of the Republic and the Government announced on 16th of March 2020 that the Covid-19 epidemic in Finland constituted a state of emergency set to be in force for three months (16 March – 16 June 2020). The use of powers laid down in the Emergency Powers Act during the Covid-19 pandemic was to ensure the adequacy of healthcare and social welfare services and to safeguard the capacity of intensive care during the crisis. The use of powers under the Emergency Powers Act meant that early childhood education and care, primary and lower secondary education, upper secondary education, vocational education institutions, higher education institutions and liberal education were closed, and remote teaching and learning were to be implemented. To secure the workforce in the social and health care sectors as well as in the case of other so called critical/essential personnel, exceptions were made to the provisions of the Working Hours Act and the Annual Holidays Act in both the private and public

sector. Arrangements were made to oblige trained professionals in healthcare, social welfare and internal security, to perform work, as necessary. Consequently, annual holidays of these personnel were also being delayed.

In addition, in terms of foreign visitors and tourism, borders were temporarily closed from foreign citizens. Only Finnish citizens and permanent residents in Finland had the right to return to Finland and were acquired to stay in self-controlled and self-organized quarantine-like conditions for two weeks. During the three months, restrictions on movement were also made to and from Uusimaa county, that is, the capital city area of Finland where population, its density and consequently also infection rates have been the highest in Finland.

Besides the Emergency Powers Act (1080/1991), the pandemic has been managed through the Communicable Diseases Act (1227/2016) by means of restrictive recommendations issued by the Government. Besides the national level and governmental level actors, the Regional State Administrative Agency (AVI), which is the government enforcement agency, issues regulations in accordance with the Communicable Diseases Act. There are six Regional State Administrations whose role is to carry out executive, steering and supervisory tasks laid down in the law such as access to basic public services, and public safety and to provide a safe and healthy living and working environment in the regions. The regional agencies are the authorities who negotiate with the local health care districts and inform citizens on the new and changing restrictions concerning Covid-19. Those restrictions executed under the Emergency Powers Act are negotiated and ruled by government authorization and the Presidential Decree.

The government also presented the first emergency package, effective on 31 March 2020, to support the economy and invited social partners, that is, three central organizations of trade unions (STTK, SAK, and AKAVA), to discuss further measures to secure the economic situation together with the employers' central associations EK and KT. As a result, a package of common initiatives was introduced to secure jobs and companies. The joint initiatives included temporary reductions in pension contributions for employers, postponement of payments, increased flexibility to implement temporary lay-offs, and improvements in access to and conditions of unemployment security. Further government measures to secure people's livelihoods were negotiated together with the social partners and implemented during spring 2020. The government also urged municipalities to refrain from temporary layoffs to secure the availability of the workforce in critical/essential positions such as health care. (STTK; Ministry of Economic Affairs.)

Further measures were taken by the Government, including temporary access of self-employed and freelancers to unemployment benefit, and direct support to businesses that was increased from 200 million to 1 billion euros in the government supplementary budget approved by the parliament. On 31 March the Government introduced a financing model for sole entrepreneurs that consisted of a fixed sum (up to 2,000 €/month) to cover fixed expenses such as rents. As of 1 April, employees laid off were entitled to unemployment benefit even if they were engaged in business activities or studies. The government presented the second additional budget of €3.6 billion out of which 1 billion was to offer further support for companies (500 million € in budget, 500 million € loans), 600 million € for protective equipment, and 150 million € on direct support to the self-employed (to be distributed by the municipalities). In addition, the government decided on a family contribution of 723 €/month (equivalent of minimum parental benefit) to parents unable to work due to

unexpected childcare responsibilities during the crisis. A third supplementary budget was presented in May 2020 to support municipalities. (STTK; Ministry of Economic Affairs.)

1.3. Data collection: Expert interviews and regional documents

The data for this report was collected from three sources. First, researcher Laura Mankki conducted a pair of interviews with two persons from the case region, East-Savo Hospital District (ISSHP), with expertise on the economics of health and social care service provision, and Human Resource Management. In this report, they are referred to as Expert 1 and Expert 2. During the interview one of the experts added the complementary pre-written comments and information provided by a third expert (referred to as Expert 3) who had expertise on the costs and economic impact of Covid-19 in the hospital district, but who was unable to attend the interview in person. In addition to this, researcher Iiris Lehto conducted an interview with a person with expertise in health care and social services from the joint municipal authority for North Karelia social and health services (Siun sote), a middle-sized hospital district in Eastern Finland. We refer to this interviewee as Expert 4 and use it to reflect the regional similarities and differences between different sized hospital districts. Both hospital districts are formed by sparsely populated municipalities with rapidly aging populations. The first interview was conducted by phone and the second interview was conducted via Microsoft Teams. The audio recordings were transcribed and stored in a safe cloud service provided by the University of Eastern Finland. The interviews were carried out during October 2020 and reflect the interviewees' views on the situation at the time.

To gain understanding of the similarities and difference between peripheric regions within the NPA area, the NPA project partners were requested to carry out a similar expert interview in their target area/hospital district. We provided the partners with a short list of questions that we also applied in our interviews. We have analyzed the interviews and we made short summaries of them in the end of the paper with concluding and comparing remarks to the Finnish case (see Appendix 1: Interview Questions).

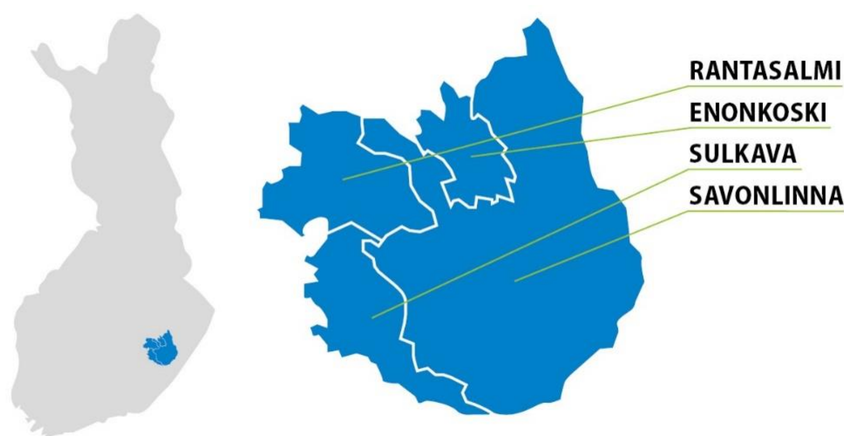
Secondly, we have collected relevant documents from the East-Savo Hospital District (ISSHP) webpage to gain background information to this report on the organizing of the services in the case area, on the human resource management plans of the organization and on the management processes that have been implemented by the hospital district. Most of the documents date from before Covid-19. Thirdly, in the analysis we draw on recent research on the effects of Covid-19 in Finland.

Next, we introduce our case hospital district and then continue to present our findings from the data.

1.4. Case: The East Savo Hospital District

East Savo Hospital District (ISSHP) is a hospital district formed by a consortium of four municipalities of the Savonlinna region: Savonlinna, Enonkoski, Sulkava and Rantasalmi (see Picture 1). It is the smallest hospital district in Finland with a population of about 40,000. The population of the ISSHP area is aging rapidly which means a growing need for services, especially in services for older people. The population of the member municipalities is declining. The number of 65–74 -year-olds and 75–84 -year-olds is expected to increase until 2030 and thereafter to decline. The number of people

over the age of 85 will increase sharply in all municipalities, especially between 2030 and 2040. The number of people over the age of 85 will almost double by 2035.



Picture 1. A map locating the case district
Source: ISSHP website

The largest occupational group in ISSHP is the nursing/care staff (1,337 employees), which accounts for 77 % of the total staff. The gender distribution of the female dominated nursing/care staff resembles the overall situation in Finland with 13% male and 87% female employees. Overall, the public health care sector is heavily female dominated. The average age of all personnel employed by ISSHP was 47 years (men: 55 years, women: 47 years). Most employees work with contracts for an indefinite period and the number of fixed-term employees is around 250. The hospital district implements an integrated operating model (joint municipal authority) that includes social services, primary health care and specialist care. This is typical for the Finnish social and health care system. Two of the municipalities (Savonlinna and Enonkoski) have outsourced their special medical care services, while the two others (Sulkava and Rantasalmi) have outsourced their primary health care. Due to this, the hospital district can be described as a hybrid hospital district (Expert 1) that relies on both public and private service providers in statutory health and social care service provision.

In the interview, one of the regional experts described the overall economic impact and work force situation caused by Covid-19 in the small peripheral hospital district as follows:

> "Due to the corona, human resources have been directed to, among other things, testing and emergency services. On the other hand, there has been less training compared to normal times, also less commuting, and these have saved us costs. The virus situation has been good here and therefore the economic impact is not as dramatic as in many other hospital districts." (Expert 3)

Another expert added that there have been some economic impacts, but with a different emphasis compared to districts where the infection rates have been higher and larger numbers of people have been hospitalized. In general, the average price per hospital day in central hospitals is €780, and in demanding intensive care approximately €3,145 (Rissanen et al. 2020, 47). The expert stated that "the preparation (to rising infection rates) has caused costs, even though there have not been Covid-

patients to treat, so it is probably not the treatment of patients that has caused costs, but this preparation." (Expert 1)

According to the European Union's Regional and Local Barometer (2020, 16) even in less affected regions, the spread of Covid-19 has required intervention by regional and local authorities in the areas distributing safety material and medical protection equipment, providing guidelines and information to citizens, and providing services for vulnerable groups. In regions where the impact of Covid-19 has been indirect and the incidence low, the emphasis has been more on emergency measures to sustain the local economy in the short term.

In the next sections, we take a closer look at the factors and resources that the case hospital district ISSHP has had in coping during Covid-19. We do this with a focus on the district's peripheral position and in light of our overall understanding of the situation. The analysis is based on the data collected for this study, concerning the economic impact on the health care and social service infrastructure in our case hospital district.

2. Regional resources in the delivery of health care and social services

2.1. Availability of personnel

It is to be expected that the pandemic will have an impact on the economy of the consortium of four municipalities that constitute ISSHP. The tax revenues of the municipalities will most likely be lower than in previous years. This is in line with other European Union countries: their revenues fell sharply due to a drastic reduction in economic activity, which is reflected in their tax base (EU Barometer 2020, 45). According to Expert 3 the declining tax revenues may cause municipalities to have to economize their social and health care services. This would aggravate the retrenchments already made in service provision. Meanwhile, expenses will grow, for example due to Covid-19 vaccinations. In other words, ISSHP must make savings and simultaneously provide new services. Similarly, other local and regional authorities across the European Union expect high or moderate pressure on their expenditure in many fields, including health and social services (EU Barometer 2020, 45).

Moreover, Covid-19 has already had a negative effect on the availability of health and social care personnel, most notably on the availability of the temporary workforce. According to Expert 1, the shortage of personnel was chronic even before Covid-19 especially in home care services:

> "Well, we provide assisted living services in home care, and there we have, one could say, a constant shortage of personnel. And that is with or without Covid-19. The fact that we do not have enough temp workers to make up for absentees means that there are units working with very scarce personnel resources." (Expert 1)

Over the past few years, these problems with home care services for older people have been widely acknowledged in Finland both in public debate and by researchers. There is a threat that the number of employees in services for older people will be insufficient since the proportion of working-age

people is declining in relation to other age groups (THL). Thus, this is a nation-wide problem in Finland that affects both densely populated urban areas and the peripheral ones. For pre-planned absences, it is easier to get temporary workers from the pool of "permanent temporary workers". However, these temporary workers who also do on-call work can choose where and when they want to go, making them a somewhat unreliable pool of workforce, Expert 4 added.

Finland, along with other Northern European and especially Nordic countries, stands out with higher shares of healthcare workers in contrast to Eastern European countries (EU Barometer 2020, 20). However, it is important to note that especially small and peripheral hospital districts have had problems with recruiting medical doctors even before Covid-19. Finland is currently reforming the funding model of social and health care services to consolidate responsibility for these services from the municipal level into a new regional tier of administration. While the goal has been to cut costs and streamline services it remains to be seen whether the reform will ease the economic impact of Covid-19 in peripheral regions, let alone ease the problem of workforce shortages (YLE).

2.2. Factors behind the success and failure to manage resources

Personnel training and agile performance of tasks are some of the key factors behind the success of resource management. In the following sub section, we discuss these factors in more detail in light of the peripheral hospital districts.

Nationwide Covid-19 guidelines state that it is essential to secure resources for intensive care. The interviewees explained how ISSPH had trained operating room personnel to perform auxiliary tasks in the ICU. Personnel was also trained for Covid-19 testing and tracing tasks.

> "The costs of laboratory have increased enormously and then the staff have been shifted from other posts and relocated to testing and tasks where they try to trace the infection, and this means that there are less staff in tasks of non-urgent treatment." (Expert 1)

The adaptation of hospitals and personnel during the first wave of the Covid-19 epidemic in the spring of 2020 took major effort. Interestingly, especially small units had better ability to act effectively and creatively in the face of the crisis (Kestilä et al. 2020, 78).

Compared to other regions in Finland, East-Savo had only a few Covid-19 patients during the first wave of Covid-19 in the spring of 2020. The personnel in ISSHP were not over-exhausted due to extensive workload but rather tired from anticipation and preparation for growing case numbers. Expert 2 notes that "when everything was new in the spring the staff pushed on, driven by adrenaline."

A key coping strategy was pre-emptive preparation of necessary skill sets to deal with the virus. During the spring, when the extent of the Covid-19 outbreak in the region was still unclear, the hospital district planned a specialized training package in co-operation with the local vocational college Samiedu:

> "On-the-job-training was tailored with the local vocational college to the field of home care and service housing, for example for municipality employees. They would get a

> kind of 'backpack of tools' if they had to move on to new posts. Home care and service housing were a major concern when there were individual cases of corona. If staff were exposed in service housing, the residents could not be left without care. On-the-job-training was a new way of working. Together with the vocational college, we organized two courses during spring and early summer. About thirty employees attended the course. We have now also been able to recruit individual employees. However, there has been no need, and no opportunity, to take advantage of every attendee." (Expert 2)

In April, the government launched the test-trace-isolate-treat hybrid strategy to tackle Covid-19 (Yle). This was boosted by the 'Koronavilkku' contact tracing app, which was produced by the Finnish Institute of Health and Welfare and was rapidly and successfully adopted with over 2.5 million downloads by November 2020 (THL). In East-Savo, testing and the tracing of infection chains were successfully performed. According to Expert 2, "our district benchmarked the testing in the Kuopio University Hospital (KYS-Erva) region, and the number of tests taken was sufficient. Our tracing team was able to catch the infection chains and to suppress the potential threatening cases." This example emphasizes the benefits of co-operation between different sectors and neighboring smaller and larger regions in the hybrid welfare model.

3. Access to health care services during the Covid-19 pandemic

3.1. People's access to services in different groups by age, disability, risk-group, language, and urgency

In this section we investigate the factors that have either enabled or restrained people´s access to health care services. In many regions, including East-Savo, the appointment services were kept at a normal level. However, according to Expert 1, appointments of those in risk-groups (older people, people with immunosuppressive medication or with increased risk) were delayed. Also access to social care services has been problematic due to restrictions. For example, in services for disabled people, the district diminished the work contribution of personal assistants, which is a service guaranteed to disabled persons according to the Disability Services Act (1987/380). Although this procedure will bring economic savings, it may increase the longer-term *care debt* caused by Covid-19. Care debt refers to a situation where people with non-Covid-19 illnesses will not be able to use health and social care services during the pandemic. While the pandemic itself has immediate impacts on people´s health due to death or illness, the concept of care debt highlights the longer-term consequences it may cause on the service system. (Heinonen 2020, 25.)

To minimize contagion, accessibility to health care services in all hospital districts has been secured by constructing a separate infection unit for primary care services. Nevertheless, according to Experts 2 & 4, people have avoided making doctor's appointments because they are afraid of catching the virus during these appointments and visits to clinics and health centers. The crucial question remains how this will backfire in the next few years in terms of health care expenses and ongoing efforts to contain them, and in terms of its effects on people's well-being. Meanwhile, the need to contain current and future costs of care will also accelerate the digital steps already taken

by the health care sector in recent years. For example, the usage of telemedicine services has already increased during (and due to) the pandemic. (Rissanen 2020; Hiltunen 2020.)

Even though access to health care services has been guaranteed at its normal level in ISSHP, there has been a nationwide worry that special groups such as non-native Finnish speakers could remain a blind spot for the communication of hospital districts. Since the first cases were detected, the need for communication has been acute. (Rissanen et al. 2020, 23.) Clear and multilingual communication is of great importance to the realization of accessibility in health care services. Most notably, the pandemic has impacted non-urgent health and dental care service use in Finland. This may add to future treatment queues for these services, and thus the overall care debt caused Covid-19.

3.2. Co-operation between private and public service producers and/or with NGOs

ISSHP operates with a hybrid model, which is typical in the Nordic and more specifically the Finnish welfare state model. The model includes close co-operation between public sector, private sector operators and non-governmental organizations. According to the experts, the co-operation between these actors has increased during the pandemic. For one, this has been seen in services where care debt has already grown, such as care of older people. To alleviate the situation and the future costs of growing care debt, ISSHP decided to contract out selected services to private service providers:

> “We have a framework agreement for contracting out eldercare services. That cooperation has increased. We have meetings with service provides once a month where we take stock of the situation. We will ensure that we act in accordance with shared policies and recommendations and try to support their work by being available.” (Expert 1)

Regular meetings, sharing of the latest information and instructions were typical forms of co-operation between actors at different levels and with operating models in the private, public and third sector. This is a way to maintain – and perhaps also to improve – transparency of process management of various services while containing the Covid-19 situation. For instance, remote digital platforms have been used extensively, as Expert 1 explains:

> “There have been regular Skype meetings in Sulkava and Rantasalmi. We have exchanged information and instructions. In fact, we have received praise from the private sector precisely for keeping them well involved and keeping them posted. The private sector receives our newsletters and instructions on time.”

As primary health care is outsourced to private sector providers in these two municipalities, and the hospital district itself is responsible for specialized care and intensive care, close co-operation is even more important between the different operators. This helps to ensure adequate capacity of the health care system during the pandemic. During the pandemic, some of the workforce in health services has also shifted their employment from the private to the public sector when necessary; this was the case, for example, when private sector medical doctors transferred to the public sector due to a reduction in the number of occupational health care patients that are typically treated by the private sector clinics (Rissanen et al 2020, 25).

In addition to public and private service providers, third sector actors (NGOs) play an important role in the hybrid service model. For instance, ISSHP has in the past carried out process development and workshop activities with NGOs, but due to restrictions to gatherings these have been on hold, as Expert 2 explained. However, the role of NGOs was emphasized by the expert from the neighboring Northern Karelia Hospital District. The expert stated that NGOs have helped with distribution of masks as well as in translating instructions to residents from language groups other than Finnish, Swedish or English. In other words, NGOs have been focusing on the most vulnerable groups. In the North Karelia region, representatives from different NGOs are also part of the Covid-19 Task Force team organized by the Northern Karelia Hospital District.

In addition, ISSHP has tightened its collaboration with other public sector operators in the area, namely with the city of Savonlinna, and especially with its Department of Education and Cultural services. This includes, for example, keeping the schools well informed with the latest guidelines and hygiene instructions.

4. Resilience factors at the regional level

4.1. Management practices before and during Covid-19

The New Public Management is probably the best-known umbrella term to describe varieties of market-based management practices from process management to system management, which have, since the 1980s, been part of health care organizing in Finland, and that explain the entrenchment of the hybrid model in service provision (Hirvonen 2014, Hirvonen et al. 2020). Even beyond this, high expectations and hopes for efficient management of social and health care services, and especially tax-funded public service systems, characterizes the service sector. Efficient and effective management is seen as a solution to several challenges, whether it is under-resourced services, the need to streamline work processes, or the need for a changed organizational culture. These expectations tend to become intensified during economic turbulences, and now also during a health care crisis.

Over the past decade, 'Lean Management' has been a popular management doctrine adapted in the Finnish health care sector. Lean management (or lean thinking) was originally developed in Japan by Toyota automobile manufacturing in the 1940s and later refined by American business consultants. Ever since, it has been applied in different industries and organization types around the world, most recently in health and social care services. Lean management aims to streamline work and service processes, to reduce waste such as delays, storage and waiting times, and to improve the quality of services based on customer needs. In recent years, East-Savo Hospital District has also adopted lean management as a way to develop its management practices. In 2018, the district was awarded with a third price in a national lean management competition (Sosteri 12.9.2019). In the interview, the experts discussed hospital management in more broad terms by referring to 'process thinking'. One of the experts explained that the current health care crisis caused by Covid-19 could be understood in terms of process management:

> "Covid-19 has become one of our processes. We have kept on learning of process management. Process management may have made it easier to control and contain Covid-19. Of course, we have recognized that Covid influences all the other processes and their flow, and that it causes delays in access to treatment and in terms of cycle times of the processes. But overall, process thinking has worked as a tool for us to organize work concerning the pandemic." (Expert 2)

Expert 2 continued to give two practical examples how their organization had utilized process thinking in managing the pandemic. The first example concerned the infection unit that had been set up for potential Covid-patients. The unit was designed for people who had Covid-19 symptoms, with the goal of isolating them from other patients. Process thinking was applied when planning how patients would enter and proceed into treatment in the unit safely. In addition to this, process thinking was applied to plan the patient logistics if they needed specialized medical care in another unit. Another example of applying process thinking during Covid-19 concerned reduction of waste – which is one of the main principles of lean management. In this case, waste referred to waiting times for people who contacted ISSHP's info desk by phone with queries concerning the virus and its symptoms. The interviewees explained how they managed to reduce excessive amounts of incoming phone calls by actively promoting the nation-wide corona virus symptom assessment webpage called 'Omaolo' ("my sense of health"). The webpage has an easy-to-use digital form to self-evaluate the risk of infection instead of calling the hospital front desk. By referring to process and lean thinking the experts expressed the need to keep service provision during the crisis as normal as possible. Moreover, their accounts reveal that by applying the lean management practices implemented pre-Covid-19, they helped prevent the Covid-virus from spreading more aggressively in the peripheral regions.

The North Karelia Hospital District had also adapted lean management practices. One of the features of lean management there has been the emphasis on 'agile teams' instead of individual workers in improving the flow of work processes. The North Karelia Hospital District had implemented a specific 'Team Model' for its Health Centers shortly before Covid-19. In an operating model based on multi-occupational teamwork, the aim was to start handling client cases immediately and, if possible, to complete each case within the same day. The central part of their team model is remote operation. Patients will be accessed and treated remotely when there is no need to come to the health center or hospital. Besides Covid-19, the remote model is expected to help contain the spread of various infectious diseases in the future, as Expert 4 explained.

In addition to process thinking, the integrated model in social and health care has been helpful in terms of human resource logistics during Covid-19. Expert 4 described that they had been able to move personnel where needed at very short notice. In addition, Expert 2 from ISSHP explained how the integrated system between primary and special health care functioned well compared to other districts where these two were separated. Importantly, the system enabled close communication between municipalities with the help of a joint pandemic management team.

> "Well, this kind of integrated social and health service system has particularly now shown its strength, that is, when we are in the same organization, it has been easy compared to those hospital districts, where municipalities have their own primary health care and social services and many independent service providers. I can only imagine that is has been difficult for them, but it has been quite easy for us. We have

> a pandemic management team that meets once or twice a week, or in the beginning, it was daily. There are key actors, who then communicate in their own areas of expertise and again pass important information forward to the pandemic management team." (Expert 2)

It was also noted by the Finnish Institute of Health and Welfare (2020, 8) that the aforementioned type of joint action areas have had better possibilities for human resource planning. Due to this, health districts were able to carry out strategic human resource planning already in the first phase of the epidemic, for instance, by transferring staff from one task to another, such as from school health care to telephone counseling.

To conclude, the process thinking applied in the management of Covid-19 had been successful only to a limited extent. This was mainly due to cost-efficiency and retrenchment measures that had been implemented already prior to the pandemic. These, for one, had negatively affected human resources in ISSHP by causing staff shortages in the region. On the one hand, re-organizing of public health and social services often creates unrealistic expectations towards the ability of management gimmicks to improve service quality despite simultaneous resource retrenchment in other areas of organization. On the other hand, the pandemic has been successfully managed by ISSHP. This, however, is not only due to the new management model that avoided large storages (that is – waste), but mostly due to the fact that Finland holds stockpiles of hospital supplies in case of emergency. The National Emergency Supply Agency (NESA), established in 1924 by the National Wartime Economy Committee, is a government agency working under the Ministry of Economic Affairs and Employment. The state holds stockpiles of materials necessary to ensure the population's welfare and the functioning of the economy in the event of major crises. The state-owned stockpiles are used to maintain viable production of energy, food, and health-care services or for military purposes. The availability of these nation-wide stockpiles has proved to be helpful to small hospital districts in reducing their dependence on the just-in-time delivery of materials. Incorporating selected aspects of lean management, while remaining open for the potential benefits of other management styles, has made the management of Covid-19 possible for the small districts.

4.2. New innovations

New innovations which were developed during the Spring of 2020 in East-Savo Hospital District, such as re-organizing of facilities, activities and staff recruitment practices are likely to remain in use in the future. As the peripheral regions suffer from a chronic shortage of social and health care personnel also during normal times, the situation was expected to aggravate during the pandemic. A great effort was made to secure an adequate number of nursing staff during and after the pandemic. One of the experts explained the situation in the following way:

> "In a small municipal center, community-based nurse training is about to begin in a way that everyone has the opportunity to take part in the training for an assistant nurse and from there to proceed to a community-based nurse, i.e. to see that people who have not studied for a while would have the lowest possible threshold. And in recruitment we have tried to take into account the educated people in sparsely populated areas who currently work in agriculture, so that they'd be able to work part-

> time, even in home care, around their own residential area. So, there have been attempts to use such means, but we have not been able to recruit a significant number of people through this. But these measures are constantly being considered and we have a good cooperation with our educational institutions in the area." (Expert 2)

Besides securing recruitment for the future, innovations included using mobile applications to help to identify and trace those infected with the virus. Innovations such as Koronavilkku (see p. 10) aimed at managing the pandemic are likely to emerge in the areas of ICT, digitalization, spatial information systems and advanced artificial intelligence (Heinonen 2020). According to the experts, digitalization had also pushed to normalize remote reception practices and remote meetings with staff. This is likely to continue after the pandemic, especially in sparsely populated and remote areas where access to services is challenged by factors other than the pandemic. In their interview, comments from Expert 3 suggested that training and work trips would also be increasingly substituted by remote meetings to cut costs in the future. The experts together confirmed that this would help save both money and time. To sum up the discussion, the experts clearly saw that the new/old means and measures that had become crucial during the pandemic were often cost-efficient and could help add to productivity of work also after the pandemic.

In addition to new social distancing habits to prevent the virus from spreading among staff and service users, the experts also pointed to the lessons learnt from the new practices of organizing hospital space, which were to be kept in mind also after the pandemic:

> "…we noticed that the yearly flu epidemic, for one, was non-existent this year because people did not move around and were not in the same places. This is something that we will keep in mind in the future when we plan how to use space and what sort of action, so that we can better take into account that patients with the symptoms of infection are not to be placed in the same space with others." (Expert 1)

Overall, maintenance of material physical resources and facilities has become crucial during the pandemic and special consideration has been given to efficient cleaning and disinfection of facilities. In general, this has made the seasonal influence rates low all over Finland in 2020 (Hiltunen, 2020 36-7). Another feature of the pandemic has been the strengthening of co-operation between the governmental organizations such as the Finnish Institute for Health and Welfare and the hospital districts during the pandemic:

> "The nationwide network operations in the Kuopio University Hospital Special Catchment Area (KYS Erva Area in Eastern Finland) have intensified and new networks have most likely emerged. For example, the chief physician is in contact with various networks several times a week. The National Institute of Health and Welfare announces a progress report every Tuesday afternoon in which we are involved. The KYS Erva Area administrators also meet every two weeks to review the status of hospital districts. This type of cooperation has increased in many ways." (Expert 2)

In addition, sharing knowledge is a notable form of collaboration. For example, university hospitals have distributed free of charge educational materials related to the treatment of Covid-19 intensive care patients to all hospital districts (Expert 2).

5. Concluding remarks and recommendations

5.1. Old and new innovations

Exceptional times have certainly called for exceptional measures, but in the case of Finland, the peripheral regions have also relied on already established innovations such as integrated models in health care, training and education, a strong public sector and its co-operation between regional and national level actors, and strong regional infrastructure. The strong effort to digitalize health care throughout the 21st century has also eased the transition to on-line, remote service provision during the pandemic.

As we noted in the previous chapter just-in-time (re-)education of personnel was one of the key innovations implemented in ISSHP. The vocational training for facility maintenance services and the vocational training for service housing and home care (especially for the elderly residents) were planned together with the local vocational institute, the city of Savonlinna, and the regional Employment and Economic Development Center.

In the autumn of 2020 the Ministry of Education and Culture granted special funding to the East Savo Association of Educational Municipalities for the implementation of community-based nurse training in Savonlinna agglomerations and neighboring municipalities. This highlights the importance and crucial role of the welfare state in financially supporting their economic vitality and employment. Investing in social and healthcare infrastructure can be understood as a *social investment* measure by the state. The purpose of such an investment is to add to society's existing stock of human and social capital and through this, to give people greater performance capacity society. Studies have found positive consequences of such investments for the competitiveness of national and regional economies (Sipilä 2011). Participation in education through vocational labour market training – and supported by unemployment benefit – can improve individuals' vocational skills and chances of finding or keeping a job. Social investments on education and training can therefore also increase the overall regional *human capital*. (TE Office.)

In health care, local providers operating with integrated service system models have fared better than others when it comes to preparation for the pandemic (Hiilamo 2020, 111). For one, it is easier to relocate staff between posts within this model. A close collaboration with the education institutes is also beneficial from the point of view of staff recruitment. According to Expert 2, East-Savo District decided that students will have the possibility to carry out their on-the-job-training during the pandemic. Thus, trainees got familiar with the practices of the hospital and, in case of need, could themselves be more easily recruited as regular staff members.

Furthermore, to reach all the residents in the region, it is highly important to deliver information in different languages (including sign language) and to use accessible language through different means and platforms. The nationwide guidelines are general, whereas local guidelines are more specific in accordance with the prevailing virus situation. Local informing requires more human resources (Rissanen et al. 2020, 25) and thus increases the short-term economic impact of Covid-19 in all regions and health districts.

In addition, co-operation with the third sector partners can be utilized to fulfill residents' basic needs through services such as grocery delivery to those belonging to groups at risk. Regarding emergency supplies, the National Emergency Supply Agency (Nesa) is tasked with planning and measures related to developing and maintaining supply security. According to them, Private-Public Partnership is the primary method for securing security of supplies for health districts (Nesa). The on-going global pandemic has obvious influence on global logistics operations. Improvement of local/national manufacturing of health care supplies could diminish the dependence on global operators and increase the sustainability of supply production in various ways.

Overall, the case of East-Savo Hospital District resembles in many ways the overall situation of health districts in Finland. The similarities in the effects of Covid-19 include (1) the decrease in number of visits to health care centers and clinics and the consequent increase in care debt that is expected to follow; (2) a rapid introduction of digital and remote services and teleworking; (3) high prevalence of exhaustion among healthcare personnel; and (4) increased and improved cooperation between actors at different levels and in different sectors of health care provision. This final point, however, has already been rather well developed prior to the pandemic in peripheral regions such as East Savo, as their regional vitality and survival is constantly dependent on close relations and cooperation across sectoral and administrative levels (THL, 2020).

In terms of future economics, the pandemic together with the exceptional measures have increased the direct intervention of public authorities in the economy. Our interviewees speculated whether this would have long-term effects on the relationship between public authorities and private enterprise and ownership. Nevertheless, it is evident that in Finland, that is often characterized as a representative of the Nordic welfare state model, the state has indeed borne the greatest responsibility for the functioning of society during the health crisis, and thereby lived up to these expectations (Aunesluoma 2020, 59).

5.2. Finland in a comparative perspective: Similarities and differences

We have compared Finland with four cases (see more in section 5.2.1): the Faroe Islands, Iceland, Ireland, and Northern Ireland. These peripheral regions share various similarities with one another and with peripheral Finland. One of the key elements behind the successful handling of Covid-19 with all of them has been a solid co-operation between public and private sectors. It is reasonable to argue that a strong hybrid or integrated model in health care and social services is beneficial to regional resilience and vitality.

Also, the practicalities of managing patient care have similarities: there have been separate sections in hospitals/clinics for those infected or suspected to be infected with Covid-19, while the role of telecare and remote working has increased. The expert from Northern Ireland stated that shortage of staff has always been a problem there, too. This seems to be a shared challenge among the peripheral regions.

The role of the public sector in Finland comes across as very strong especially when it comes in investing in education. For peripheral regions, it is important to find novel ways to encourage and to create paths for working-age population to enter education in social and health care occupations.

5.2.1. Summary of the Northern Ireland case

The area covers NHS (public sector) services with ten hospitals, with six of them regarded as equivalent to District General Hospitals. The number of staff is 61,000. Private health care is on the margin in Northern Ireland.

According to the expert, GP (general medical practice) services became 97% virtual with good acceptance from the population. Many hospital services also became virtual, again with significant success.

Compared to other parts of Great Britain the rates of infection have not been as bad in Northern Ireland overall, partly helped by geography. Problems have occurred with the capacity of the hospitals. The expert notes that many hospitals have worked at capacity or beyond capacity.

5.2.2. Summary of the Iceland case

The rural hospital is located in the north of Iceland with 139 beds and about 500 FTEs (full-time equivalents), over 50 specialist physicians and 185 nurses.

The expert notes that health care in Iceland is funded over 85% by public funding either with public health care institutes (hospitals and health care stations) or by way of contracts with the private sector. The private sector for example helped with the testing. Access to health data for all diagnosed was a key factor in keeping the infection rates low.

A reserve force of health care personnel for Iceland was established. The reserve force included retired health care workers and those not working in the public sector. In the hospital separate rooms were reserved for Covid-19 patients, and staff was relocated from other departments. Emphasis was placed on educating and training in infection control.

5.2.3. Summary of the Ireland case

North Clare Primary Care Group Team serves 8,000 patients covering an area of 600sq/km. The practice of the interviewed expert is located in a small village with 260 population. It hosts the multidisciplinary health professionals and the local Health Service Executive. During the spring when Covid-19 arrived in Ireland the staff were moved from a model of 95% face-to-face vs 5% telephone to the reverse.

The strength of the practice is the high level of patient trust and the small size of the community. The pandemic has had a positive impact on how the role of General Practice is viewed. According to the expert there is a new appreciation of Community Health Care that has been transformative. Also, the impact has been on strengthening relationships between different sectors and the lines of communication and integration.

5.2.4. Summary of the Faroe Islands case

The number of inhabitants of the Faroe Islands is approx. 53,000. Health care services are arranged in line with the Scandinavian model, according to which the main responsibility is with the public sector. There are three hospitals in the Faroe Islands. One in the northern part of the islands, one in the south and one in the central part, which is the main hospital. In addition to services from the local hospitals, the Faroe Islands have arrangements with foreign hospitals for some specialized services. The total number of employees in the hospital sector is approximately 1,000, including 100 doctors and 400 qualified nurses.

Regional resources such as staff and materials have been secured by reorganising hospitals internally and privatising the testing of Covid-19. Even though the number of hospitalized people in the Faroes has been low, periodically the hospitals have reduced the service level by limiting treatments to the most critical patients. The cooperation between private-public-NGOs has taken place and worked out well. For instance, non-profit NGOs have provided services to people in quarantine, such as transport, groceries and other daily activities.

The resilience factors identified include large scale testing for the virus, tracing and encapsulating the infection at an early stage. A precondition for successful tracing has been the fact that the area covered is relatively small. The hindering factor on the other side has been the lack of a legal framework to enforce quarantine and testing.

In the future the main challenge for the hospitals will be to catch up with the postponed treatments of less critical patients.

6. The future challenges: The role of Covid in the economy of the regions

It is safe to estimate that the pandemic has created regional differences in terms of population welfare within and between nation states. During the spring of 2020 in Finland, the welfare of the people living in the most infected area of Uusimaa was reported as being the weakest. According to the survey based on the interviews with social workers, the greatest concern was the wellbeing of families with children living in small municipalities with a population under 20,000. On the other hand, the social workers signaled more concern related to people suffering from mental health problems in towns with population over 50,000 compared to smaller ones. In addition, there has been concern over the welfare of asylum seekers living in bigger cities compared to those living in smaller municipalities. (Eronen ym. 2020, Kestilä et al. 2020.)

In addition to concern over regional differences between residents' welfare, there is a concern over the rise of regional economic differences. Even though the new remote working possibilities may increase the attraction of peripheral areas, and although smaller districts appear to be more agile and thus more resilient to survive the pandemic, there are still severe economic issues concerning the overall organizing of social and health care services in the peripheral regions after Covid-19. The Finnish interviewees discussed several issues related to future challenges, such as the costs of the pandemic, how to organize the vaccination programme, and the possible severity of the care debt that the pandemic would cause. In addition, the experts described how the workload of the staff had been distributed unevenly since the pandemic, which could soon lead to problems with well-

being at work. Consequently, even though the number of infected patients had remained low in the Finnish case district ISSHP, having to be constantly prepared and alert demanded resources, which made the pandemic less easy to handle. The experts described also the multiple and overlapping challenges the regions were going through as follows:

> "Everything requires financial investments at least for the next year, clearly. And then, when we get out of this, then it's still shrouded in obscurity, how much care debt there is, and how much will come in terms of long-term sickness, whose personal care balance has deteriorated, and what will follow from that." (Expert 1)

It will remain to be seen whether the care debt will increase the need for special health care and how much this will increase expenses in health districts. The experts also discussed the precariousness of the system of tax funded public health care services due to owner municipalities' anticipated loss of tax revenue. Municipal tax revenues will most likely be lower than in previous years as the economy has suffered widely from the pandemic. This development is in line with the rest of the European Union: member states' revenues have fallen sharply due to the drastic reduction in economic activity, and thus in their tax base (EU Barometer 2020, 45). Expert 3 added that:

> "Host municipalities in the health district consortium are losing tax revenue due to Covid, which affects their willingness to pay for social and health care services; i.e. frameworks for budget cuts and cost containment will be even stronger in the future and their aims will be high. And we are already living with this as we speak. But, naturally the new financial model courtesy of the social and health reform ahead will also affect us one way or another (to regionalize municipal responsibility for service production), but yes, the austerity plan of municipalities will still bite us."

According to Expert 3 the changes in tax revenues may cause municipalities to economize and introduce new and tougher retrenchment to social and health care services. Meanwhile, they will need to deal with incoming expenses, for example those caused by Covid-19 vaccinations. In other words, ISSHP will need to make savings and simultaneously deliver new services. In a similar vein, local and regional authorities across the European Union are expecting high or moderate pressure on their expenditure in many fields, including health and social services (EU Barometer 2020, 45).

Most importantly, the small innovations discussed by the experts in the region of ISSHP included the development of new staff recruitment strategies. The possibility to work part-time was emphasized to attract new labour force participants and to encourage them to work even as little as one day per week. Another idea to be used in the future that was mentioned was the team model in which a patient's case was to be dealt with through team work and teleconsultation, for instance when the reason to book an appointment was the need for a prescription for the patient's acute medical condition.

Despite the small innovations, the only real hope the experts saw for their region to come out of Covid-19 successfully was that the problems (care debt and the already on-going pressure to economize) would not have to be solved all at the same time. However, they were skeptical about the possibility for this, and instead predicted major economic challenges ahead. On the other hand, other experts and researchers have been more optimistic about the deglobalization that has

occurred during the pandemic. In any case, repairing the immediate economic consequences of the crisis and avoiding a recession will require a major increase in public spending and investment. These investments can, however, be directed in a way that is conducive to a carbon-neutral, climate-friendly and ecologically sustainable economic system. In addition, while it has become commonplace today to think that public spending is excessive, it is important to notice that social and health care expenses also provide employment and thereby income to individuals, and income tax revenues to the state and the municipalities. (Aunesluoma 2020, 55; Jokinen 2017, 71.)

The lean management applied in the peripheries described in this study appears as a mechanism of hope (i.e. as a means to do more with less), but it may act as a way to justify lack of investment or even resource cuts by the health district. Investing in resources such as staff should be considered as an investment in the future of social and health care infrastructure. Emphasizing new management models in dealing with the possible care deficit and care debt has its pitfalls, especially if cost efficiency is taken as the starting point for organizing services. The new management models such as lean management can, on the other hand, prove useful and innovative if the client satisfaction is prioritized in process efficiency, as it should be in lean thinking. Moreover, the quality of care is always dependent on the welfare of the staff. The agency of workers in labour intensive sectors, such as health care, may improve or deteriorate in consequence to new management models if working conditions are not considered when implementing new management ideas (Hirvonen et al. 2019).

Moreover, and in relation to peripheral regions and their characteristics beyond the economic environment, the “ecological transition” should be a project that unites societies instead of dividing them. From the perspective of peripheries, this means the need to secure sustainable and well-functioning social and health care services. In addition to tackling the threats that the pandemic and climate change have brought with them, positive prospects are needed to carry out the transition. Therefore, social and health care services are not something extra, to be added in after planning the industrial and economic roadmap for the ecological and progressive future. Instead, social and healthcare are at the heart of ecological reconstruction of cities as well as peripheral regions (BIOS 2020).

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APPENDIX 1: INTERVIEW QUESTIONS

To get an understanding of the economic impact of Covid-19 on the regional health care services, we would like the partners to conduct **a short expert interview** for instance with the director of human resources of the health care district/hospital/services or with a person who is in a position to have information and knowledge on the regional health care services during Covid-19. Preferably a person with a basic understanding on the economic effects of Covid-19 in the region. **Method:** you may carry out the interview on telephone, remote meeting app, face to face, or email. There is no need for detailed interview transcripts, your interview notes indicating answers to the following questions will suffice. Return the answers to: iiris.lehto@uef.fi by February 7.

Questions:

1. **Basic information of the person/authority interviewed (who is the person interviewed, occupation and job description?)**
2. **Some basic information on the area/district and health care services and how they are arranged (public-private-hybrid model? how many employees? etc.)**
3. **How has Covid-19 reflected on the regional resources to deliver health services (material/personnel/other resources)?**
   - In what way have you secured the availability of personnel? What kind of means/tools have you applied to do this? (for example, re-training, recruitment)
   - Would you name some factors behind the success / can you name some factors behind the failure you've experienced?
   - How has the region managed/coped in comparison to the rest of the country?
4. **Would you evaluate the availability of health care services in the area during the corona pandemic?**
   - Have the people/citizens been able to access the services? How? (Remote e-health service/in person service)
   - In what ways have you secured that people of all ages, nationalities (for instance undocumented migrants) and people with different condition/functional ability have had access to services?
   - Has there been new cooperation between private and public service producers or/and with NGOs? Has the relation between these three sectors changed in some way?
5. **Would you elaborate the management practices implemented in the area before and during the corona pandemic?**
   - Have there been any failures in managing the pandemic? Could you give an example?
   - What kinds of innovations (in service delivery, management, staff recruitment or other) have been developed?
   - Have you developed any new partnerships/co-operations? Have any new partnerships/co-operations arisen? Either regional or nationwide.
6. **Would you elaborate on what kind of factors (e.g., (re-)training, communication, digitalization, close connections, networks, safety equipment storage ...) within your peripheral region/localities/communities have**
   - helped deal with the pandemic?
   - hindered dealing with the pandemic?
7. **Would you elaborate on how social care services are delivered in your region/locality?**
   - Would you elaborate on its success/failure? (Please, illustrate with one or two examples)
8. **Final question: would you elaborate what kind of a role Covid will have in the economy of the region from the perspective of its health care services in the future?**