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Pandemic preparedness and response regulations in Finland: Experiences and implications for post-COVID-19 reforms☆

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ABSTRACT

The COVID-19 pandemic has plagued health systems in an unprecedented way and challenged the traditional ways to respond to epidemics. It has also revealed several vulnerabilities in countries' health systems and preparedness. In this paper we take the Finnish health system as an example to analyse how pre-COVID-19 preparedness plans, regulations, and health system governance were challenged by the pandemic and what lessons can be learned for the future. Our analysis draws on policy documents, grey literature, published research, and the COVID-19 Health System Response Monitor. The analysis shows how major public health crises often reveal weaknesses in health systems, also in countries which have been ranked highly in terms of crisis preparedness. In Finland, there were apparent regulative and structural problems which challenged the health system response, but in terms of epidemic control, the results appear to be relatively good. The pandemic may have long-term effects on the health system functioning and governance. In January 2023, an extensive health and social services reform has taken place in Finland. The new health system structure needs to be adjusted to take on board the legacy of the pandemic and a new regulatory frame for health security should be considered.

1. Introduction

The COVID-19 pandemic has proven to be more complex than previous pandemics in terms of the scale and the scope of required mitigation measures. It revealed vulnerabilities in countries' health systems and preparedness [1]. Over the course of the pandemic, countries made amendments to legislation and governance structures to be able to respond better to the next wave and to future crises [2]. The pandemic led to shifts in power between and within governments [3,4]. Central governments took powers over and away from subnational governments, but later decentralized the responsibilities in the pursuit of avoiding blame for repeated mitigation measures [5].

In this paper we use the Finnish health system as an example to analyse how pre-COVID-19 preparedness plans, regulations, and health system governance were restructured, and what lessons can be learned. Finland serves as an example of a small country (5.5 million inhabitants) with a decentralized health system and universal health coverage. A WHO joint external evaluation (JEE) in 2017 concluded that Finland has extensive and effective capacities to address major public health emergencies [6]. Finland has also scored well in other international evaluations, such as the Global Health Security Index [7] and Epidemic Preparedness Index [8]. The JEE evaluation report warned about complacency as no major threats were recently experienced. Now that such a threat has been realised, it is timely to analyse how the Finnish health system was able to harness its capacity for the pandemic response. Thus, the case of Finland provides valuable insights not only into investigating its own capabilities but it also informs further development of international evaluations.

Abbreviations: JEE, WHO joint external evaluation; RSAA, Regional State Administrative Agency; MSAH, Ministry of Social Affairs and Health; THL, Finnish Institute for Health and Welfare; CDA, Communicable Diseases Act; EPA, Emergency Powers Act; NPP, National Pandemic Plan.

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In this paper we focus on the acute phase of the COVID-19 epidemic in Finland, that is 2020-2022. As of January 2023, a major health and social service reform was implemented in Finland. As a result of the reform 21 wellbeing services counties were established. The counties are responsible for both primary and specialised care as well as social services and rescue services [9]. This means that in Finland the recovery and learning from the COVID-19 pandemic will take place within these reformed health system structures. In this context, it is important to consider how public health services and health system preparedness should be reformed as part of the new health system structure based on the lessons learned from COVID-19. This analysis may also inform other countries going through health system reforms.

Our analysis draws on policy documents, grey literature, and published research. In addition, we utilize the information from COVID-19 Health System Response Monitor by the European Observatory on Health Systems and Policies [10].

2. Organisation of public health services, health security, and pandemic preparedness in Finland

2.1. The key actors and distribution of responsibilities

In Finland, the responsibility for public health services is scattered on different levels and between various actors in the health system. Therefore, in this article public health functions such as monitoring and surveillance, public health emergency management, protecting population against health threats are investigated as functions of the health system [11]. In 2020–2022, the administration of the Finnish health system was divided between national, regional, and local levels. Most public health services were decentralized and integrated in local health systems, especially municipal primary healthcare (e.g. vaccinations) and housing and environmental services [12].

During the acute phase of the COVID-19 epidemic in Finland, municipalities were responsible for organising primary healthcare, preparedness planning, and prevention of communicable diseases as well as of various mitigation measures to limit local epidemics [13]. At the regional level, 20 hospital districts were responsible for organising specialised healthcare [12]. Six Regional State Administrative Agencies (RSAA) coordinated and supervised the regional contingency planning in municipalities and hospital districts. The RSAAs also had the mandate to make decisions on restrictions in their administrative territory if restrictions were needed at regional level [13].

At the national level, the Ministry of Social Affairs and Health (MSAH) supervised preparedness and implementation of health policy [14]. The Finnish Institute for Health and Welfare (THL) acted as a national expert organisation supporting health system actors and, for instance, oversaw the national epidemiological surveillance and coordinated vaccinations [13]. In Table 1 we describe the division of responsibilities and mandates for controlling communicable diseases in Finland according to the state of law at the beginning of the pandemic.

2.2. Key regulations guiding pandemic preparedness and health system response

In 2020, the key legislation regulating pandemic preparedness and health system response in Finland included the Health Care Act (2010) [14] and the Communicable Diseases Act (CDA) (2016) [13]. The former regulated general health system functions and healthcare provision, while the CDA defined the responsibilities and responses to communicable diseases.

While the CDA constituted the core for infectious disease control, also the Emergency Powers Act (EPA) from 2011 [15] recognised a widespread dangerous epidemic as a potential cause of a national emergency. The EPA granted the government, under a national emergency, the possibility to use exceptional powers, such as the right to restrict people's movements and to oblige healthcare units to adjust their operations.

Several plans and strategies supplemented the regulative framework for pandemic preparedness. The National Pandemic Plan (NPP) from 2012 [16] was the key preparedness document for pandemics in Finland until spring 2020. It was based on the experiences from the swine flu pandemic in 2009–2010. The plan had been incorporated to the National Risk Assessment (2018) [17] and the Security Strategy for Society (2017) [18], which aimed to harmonise national preparedness across different sectors. The NPP obliged hospital districts and municipalities to have their own pandemic plans in place and to ensure they were updated. Healthcare facilities were expected to have a 3–6-month stock of essential material for normal use to prepare for pandemics [16].

Table 1
Responsibilities and mandates of controlling communicable disease in the Finnish public health functions in 2020-2022.

	Local	Regional		National		
	Municipalities	Regional State Administrative Agencies	Hospital districts	Finnish Institute for Health and Welfare	Ministry of Social Affairs and Health	Other ministries, PM's Office
Role in preparedness	Preventive and environmental health services and health guidance	Coordination and surveillance of preparedness for disruptions in healthcare	Preparedness to control and manage exceptional epidemics	Coordination of epidemic surveillance, diagnostics, and vaccination programme	National preparedness for disruptions in healthcare	
Role in pandemic governance	Epidemic control, early diagnostics, vaccinations, and medical care	Supervision and coordination of communicable diseases control regionally	Collaboration with municipalities on epidemic control, diagnostics, and medical care Providing medical expertise to other actors in their regions	Expert organization supporting actors at all levels and administrative domains Guidance to the public on communicable diseases Research, development, and education on communicable diseases	National governance of disruptions in healthcare	
Powers in pandemic governance	Powers to introduce restrictive measures	Powers to introduce restrictive measures			General planning and guidance of communicable diseases control. Preparation of legislation	Preparation of legislation and planning and guidance of other administrative domains

Finally, the Act on Mandatory Reserve Supplies obliged healthcare providers as well as marketeers and importers to stockpile certain amounts of critical medicines [19].

3. The COVID-19 health system response in Finland

In Fig. 1 we provide a timeline of the main events and tools used for the COVID-19 health system response in Finland. In the following we describe some of the measures in more detail with a special focus on the key vulnerabilities in terms of regulation and health system governance and how acute regulative and governance issues were dealt with.

3.1. Pre-pandemic regulative framework in action

The aim of the COVID-19 health system response in Finland was to protect those at risk from severe disease and to prevent the health system from becoming overburdened [20]. The response was initially based on the NPP, local and regional preparedness planning, and the CDA. The government declared a national state of emergency twice: in March 2020 and in March 2021 [21] to enable the use of emergency powers. However, only few emergency powers were eventually introduced [22, 23]. The majority of mitigation measures, such as quarantine and isolation, closing public premises, and restrictions on public gatherings, were imposed based on the CDA making it the principal instrument for pandemic governance.

The EPA was used mainly to fill in the gaps in the normal legislation [2]. For instance, the EPA provided the possibility to deviate from the waiting time guarantee for health services, which was used to scale back non-urgent care, and to restrict the movement of people, which was introduced in spring 2020 by closing the borders of the capital region and its surroundings (Uusimaa) to limit the spread of the virus to the rest of the country [10]. Even though many restrictions were based on the CDA also during the national state of emergency, the government *de facto* held a lot of power at that time. Although the local and regional authorities wielded formal powers to act, they mainly implemented decisions outlined by the government throughout the pandemic [10].

Early on it became clear that the NPP modelling an influenza pandemic was not fit-for-purpose in the context of COVID-19. It was replaced with the "Hybrid strategy" introduced in May 2020 [20]. In December 2021 an emergency brake mechanism (government plan for returning to extensive restrictions) was launched. [10] Other important strategy documents included the Vaccination Strategy and the Testing strategy [24,25,26]. These strategies, which were all amended several times, worked as tools for national-level information steering.

In the hybrid strategy, local epidemic control based on the CDA and an effective test-trace-isolate -system were emphasised [20]. The CDA, however, lacked powers that would have been needed to control and govern a wide-spread, long-lasting epidemic. Consequently, COVID-19-specific temporary amendments were made 19 times to the CDA from the summer 2020 onwards [27]. The EU Digital COVID

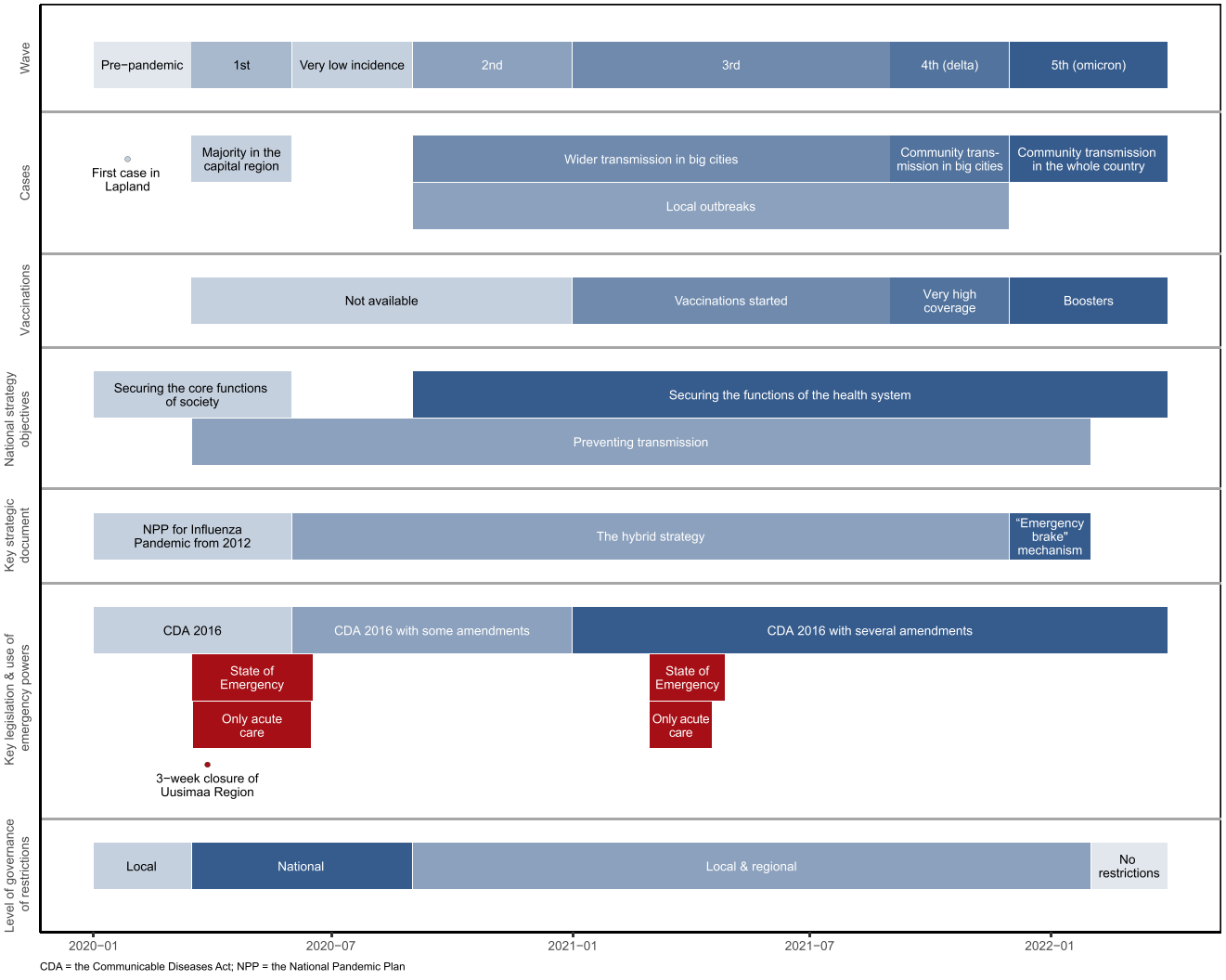

Fig. 1. The development of the COVID-19 outbreak and health system response in Finland.

Certificate was introduced in October 2021 as an alternative approach to CDA-based restrictions [28]. Vaccinations for the healthcare workforce were made obligatory in essence by amending the CDA in December 2021. While the EPA provided possibilities to close several public facilities including schools, new emergency legislation was needed to close all restaurants, cafés, and bars. This took effect for the first time in April 2020 [29].

Border control was another area in which the CDA did not allow for large scale public health measures [10]. The powers given by the CDA on isolation and quarantine are based on individual restrictions for persons who are known to be infected or exposed. It was interpreted by the MSAH that mandatory quarantine to all passengers arriving in Finland would not be possible according to the legislation. Thus, preventing transmissions was initially based on recommendations and guidance given upon arrival. By the end of March 2020, the borders were closed with some exceptions by using legally non-binding instruments [30]. The EU Digital COVID-19 Certificate was introduced in July 2021 for travel [31] but could not be legally used for other purposes (e.g. restaurants and gatherings) until October 2021 [28].

3.2. Health system governance in a decentralized health system

The decentralized health system structure and the legislation which distributed powers to different health system actors revealed ambiguities in the roles of health system actors. At the beginning of the pandemic, it took time for different stakeholders to conceive their responsibilities and rights [32]. This is well illustrated by what happened at the main international airport in Finland. To impose sufficient measures, authorities from aviation, border control, municipalities, and regional health authorities, were needed to act together. As the distribution of work was not clearly predefined, there were substantial delays in coordinating the activities [33].

After the national state of emergency was set aside in May 2020, pandemic control was also *de facto* decentralized and streamlined with the CDA. However, there were only a few regional horizontal structures in place to coordinate the work of the authorities, which normally did not have to make operational decisions in a coordinated manner [34]. As a result, the MSAH instructed that in each hospital district a regional coordination group should be established. These groups were responsible for the horizontal coordination of the epidemic control in their districts. They involved representatives from municipalities, hospital districts, RSAAs, and THL, for instance [35]. Typically, the groups aimed to work out a consensus on restrictive measures that each authority would then impose within the limits of their powers [32,34] because the regional coordination groups did not have the legal authority to issue instructions or make decisions. Because of this, the ombudsman ruled in 2022 that the groups' activities had been partially illegal [36].

While the horizontal coordination at the regional level has been reported as being successful and supported by the new structures, several contradictions in vertical coordination emerged during the pandemic [32]. Because of the decentralized structure of the health security system, the main tool to steer the local and regional health system level were the official instructions issued by the MSAH [10]. The numerous instructions and their interpretation as binding regulations rather than soft law by some actors [30] may have further amplified the difficulties of a decentralized system to act in the context of a crisis where clear chains of command and control are often recommended [37]. Municipalities and RSAAs reported unclear communication, contradictory recommendations, and overriding their competencies by national authorities, especially by the MSAH [4,38].

The MSAH was the Ministry responsible for pandemic control, but the pandemic governance required horizontal coordination across different sectors also at the national level. At the beginning of the pandemic this was mainly organised through a COVID-19 coordination group comprised of the permanent secretaries across different Ministries [38]. In addition, the Ministerial Working Group on Health and Social Services and later the Ministerial Working Group on COVID-19 were responsible for cross-sectoral coordination [10].

4. Discussion

When measured by epidemiological indicators Finland has been fairly successful in its COVID-19 pandemic response [38,39]. Partly this "success" is most probably explained by other factors than those subject to the analysis of this paper. One factor is geography: Finland is a small and sparsely populated country situated in the north-eastern part of Europe. The pandemic waves arrived in Finland a few weeks later than in the southern and central Europe, leaving the decision-makers and health professionals time to learn from other countries' actions [32]. Additionally, the hierarchical structure of the system enabled reorganising the health system rapidly [32] and distributing funding from the national to local and regional levels was relatively uncomplicated [40]. Despite several structural problems and the ambiguities outlined above, Finland seems to have had the key elements, which can be linked to a successful pandemic response, in place. These included sufficient state capacity, strong formal political institutions, social policies to support the compliance of the citizens [41] as well as a high level of societal trust which reduced the need for mandatory restrictions [2].

The pandemic revealed several issues that require closer attention. As described above, the pre-pandemic legislative framework was not sufficient to control a pandemic of long duration during which large-scale, population level restrictive measures were needed. Instead of an overall reform of legislation, several COVID-19-specific, ad hoc amendments were created. This resulted in a fragmented patchwork rather than a well-balanced frame. Enacting a specific pandemic law has been suggested as one solution to solve some of the regulative problems that were encountered during the pandemic [42]. However, it is unclear whether the law would be able to solve the problems (powers and their distribution) or just move them under a different piece of legislation.

Before the COVID-19 pandemic, the preparedness for public health emergencies was evaluated to be good in Finland [6,7,8]. However, the JEE evaluation highlighted some of the same issues that proved problematic during the COVID-19 pandemic. These include multisectoral and multilevel collaboration without a clear chain of command and vague decision-making structures [38]. During the COVID-19 pandemic several tensions emerged between the national and regional authorities [4,32]. The structural fragmentation and distribution of powers to several authorities revealed ambiguities in the roles and responsibilities of different actors. While this can be seen as a factor that could enhance the health system's everyday resilience by distributing the responsibility for preparedness and emergency response to several actors [43], public health emergencies often call for clear command chains [37]. This may partly explain why there was a tendency to centralize power to the national government and MSAH at the most critical stages of the pandemic.

In the spring 2020 the power was *de facto* centralized to the government and the MSAH even though they did not have powers in the CDA. While the national government and the MSAH were responsible for information and resource steering, the actual powers to act on mitigating the epidemic were with the municipalities and the RSAAs. This dilemma, which was characteristic of Finland's pandemic governance, of not having strong enough powers for steering and clear responsibilities at neither central nor local levels resulted in inconsistencies in the public health actions and a lack of clarity especially in several soft law instruments through which national steering was exercised. This raises questions of transparency, legitimacy, and accountability [4,44]. When evaluating the decisions on various measures taken by public authorities, the courts have considered the operation of the RSAAs to be legally blameless [45]. However, some of the actions taken by the MSAH have been considered as illegal departures from the regulation which governs the mitigation measures [46]. The rapid shifts between centralizing and decentralizing of decision-making power by the national government may also reflect the dynamics of

taking credit and avoiding blame [4].

A health system reform in Finland took effect in January 2023 [9]. It means an end to the highly decentralized structure of the health system [47]. This historical, large-scale structural reform provides a window of opportunity to implement reforms stemming from the lessons learned from the pandemic [48]. At this point, however, the responsibility for public health services remains distributed to multiple actors (i.e. the municipalities, the new counties, RSAAs, and the national authorities) and the legislation leaves the mandates for public health ambiguous [49]. This may risk capabilities for more coordinated actions when the next public health crisis emerges.

5. Conclusions

In this paper we have provided a case analysis of the COVID-19 health system response in Finland. The analysis shows how major public health crises often reveal vulnerabilities and weaknesses in health systems, also in countries which have been ranked highly in terms of crisis preparedness. Important in this respect is whether a country can overcome these difficulties and act despite the problems in regulation or governance. In Finland there were apparent regulative and structural problems which challenged the health system response, but in terms of epidemic control, the result seems to be relatively good. The pandemic can, however, leave a legacy which may have long-term effects on the health system functioning and governance through path dependencies in regulatory and organisational frames. The major health system reform, that took place in Finland in January 2023, could allow for public health services and the regulation of public health emergencies to be reformed to improve the preparedness for future public health crises. Additionally, an iterative round of evaluation after the 2017 JEE could benefit both Finland and the health systems globally.

CRediT authorship contribution statement

Soila Karreinen: Conceptualization, Investigation, Writing – original draft, Writing – review & editing, Visualization. **Pauli Rautiainen:** Conceptualization, Writing – original draft, Writing – review & editing, Visualization. **Ilmo Keskimäki:** Conceptualization, Writing – original draft, Writing – review & editing, Supervision. **Markku Satokangas:** Investigation, Writing – review & editing, Visualization. **Marjaana Viita-aho:** Investigation, Writing – review & editing, Visualization. **Liina-Kaisa Tynkkynen:** Conceptualization, Writing – original draft, Writing – review & editing, Supervision.

Declaration of Competing Interests

The first author has worked in Ministry of Social Affairs and Health from March 2020 to May 2021.

The other authors declare that they have no competing interests.

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