FINLAND'S COVID-19 POLICY ACTIONS: BALANCING BETWEEN LEGAL BOUNDARIES, HUMAN RIGHTS AND CONTROLLING VIRAL SPREAD

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Background. The COVID-19 pandemic has shown that every country must constantly re-evaluate their strategies and come to terms with the new reality: despite ongoing vaccinations, COVID-19 is here to stay for an unspecified time, and public health measures to slow its spread must be carefully weighed against their negative consequences to the economy, social life and other aspects of health.

Objectives. The purpose of the study was to describe and discuss the policy actions taken by the Finnish Government in response to the COVID-19 pandemic. The scope of the study comprised both obligatory decisions and voluntary recommendations to prevent widespread viral transmission and subsequent excessive strain on health care resources.

Methods. A narrative review was carried out using data gathered from web pages, reports and publications by the authorities and other reliable actors. The time frame included in the study extended from 1 January 2020 to 28 March 2021 to build a timeline over the whole of the pandemic so far, from the first wave to the current strategy.

Findings. Finland declared a state of emergency in mid-March 2020, activating the Emergency Powers Act that enabled a nationwide closure of schools, prioritisation of health care resources and waiving overtime regulations for health care staff. Public venues, restaurants and mass gatherings were shut down under ordinary legislation. No stay-at-home orders or day care closures were adopted; these were replaced by voluntary guidelines on social distancing and hygiene. After a significant decrease in incidence during the summer and a subsequent second wave in late 2020, the country shifted towards a hybrid strategy relying on efficient test-trace-isolate-treat processes, targeted regional measures, and vaccinations. As of March 2021, a third surge in incidence and increasing occurrence of mutated SARS-CoV-2 variants forced the Government to contemplate shifting towards a more restrictive agenda, including lockdown.

Conclusions. Finland's strategy relied on a combination of obligatory and voluntary measures, emphasising open communication and accountability towards the public. Decisive leadership, keeping human rights at the heart of policy making, and a high degree of public trust on authorities contributed to Finland's position among the European countries least affected by the COVID-19 pandemic. These factors enabled the timely introduction of countermeasures and a good level of public compliance to restrictions and guidelines. However, Finland may be facing significant future challenges due to the emerging third wave, uncertainties about vaccine efficacy against new viral strains, and long-term consequences of the pandemic situation.

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CONTENTS

LIST OF ABBREVIATIONS

2019-nCoV	2019 novel coronavirus
ARDS	Acute respiratory distress syndrome
CCDC	Chinese Center for Disease Control and Prevention
CDC	(U.S.) Centers for Disease Control and Prevention
CFR	Case fatality ratio
COPD	Chronic obstructive pulmonary disease
COVID-19	Coronavirus disease 2019
ECDC	European Centre for Disease Prevention and Control
EU/EEA	European Union / European Economic Area
Fimea	Finnish Medicines Agency
FIOH	Finnish Institute of Occupational Health
HCoV	Human coronavirus
HUS	Hospital District of Helsinki and Uusimaa
IPC	Infection prevention and control
Kela	Social Insurance Institution of Finland
MERS	Middle East respiratory syndrome
MERS-CoV	Middle East respiratory syndrome coronavirus
MSAH	Ministry of Social Affairs and Health
NHI	National Health Insurance
NPI	Non-pharmaceutical intervention
OECD	Organisation for Economic Co-operation and Development
PPE	Personal protective equipment
RSAA	Regional State Administrative Agency
SARS	Severe acute respiratory syndrome
SARS-CoV	Severe acute respiratory syndrome coronavirus
SARS-CoV-2	Severe acute respiratory syndrome coronavirus 2
THL	Finnish Institute of Health and Welfare
TTI	Test, trace, isolate
WHO	World Health Organization

1 INTRODUCTION

During the year 2020, humanity faced an unprecedented challenge as the coronavirus disease 2019 (COVID-19) pandemic swept through the world, leaving no country unaffected. The ability of the new severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) to be transmitted more effectively and cause less fatalities than its predecessor, SARS-CoV, enabled it to spread globally in a matter of months. As of 28 March 2021, WHO reported a cumulative total of over 126 million confirmed cases of COVID-19 and over 2.7 million COVID-19-related deaths worldwide (World Health Organization 2021). This yields a global case fatality ratio (CFR; the ratio of number of deaths to the number of cases) of about 2.2%, which is considerably lower than that of the SARS outbreak in 2002–2003 that caused nearly 800 deaths among the over 8,000 people diagnosed with the infection (10%) (Peiris et al. 2004). There is a great deal of variation in CFR values between regions, reflecting differences in access to high-quality health care, biological risk factor profiles, and delays in reporting. Furthermore, CFR tends to overestimate the risk of death caused by COVID-19 to an infected individual, as it does not take into account undetected mild or asymptomatic infections (World Health Organization 2020b). Regardless of mortality, societies are facing an unprecedented burden of COVID-19-related morbidity in the form of prolonged disease, re-infections, absence from work, and strain on health care resources.

COVID-19 vaccinations with various approved preparations are ongoing globally. Until the population reaches a sufficient level of immunity, the transmission and spread of the virus need to be slowed down by preventive strategies. WHO has called for each country to adopt a combination of public health measures tailored to their individual situation (World Health Organization 2020f, 2020h). Some methods are recommended for all, *e.g.* hand hygiene, respiratory etiquette and mask wearing. Most countries have also used social distancing methods such as imposing curfews, closing schools and restricting travelling, which can effectively reduce transmission but bear many negative consequences to society as a whole. The negative impact to economy is of vast magnitude: jobs have been lost; businesses have been closed; stock markets have plummeted (Nicola et al. 2020). Closures of educational facilities may jeopardise the future studies of millions of children and youth. Lockdown exacerbates socioeconomic inequalities, as individuals of low income have limited means to do their grocery shopping online, can less frequently work remotely, and may be relying on school meals and public day care for their children. In particular, vulnerable groups such as

multi-problem families are at increased risk of mental problems and domestic violence during social isolation (Finnish Institute for Health and Welfare 2020c).

Europe, which took over China's position as epicentre of the pandemic in mid-March 2020 (World Health Organization 2020a), has been heavily affected by the virus. As of week 11, 2021, the European Centre for Disease Prevention and Control (ECDC) reported a cumulative total of over 25 million cases and over 590,000 deaths in the European Union / European Economic Area (EU/EEA) region, excluding the post-Brexit UK (European Centre for Disease Prevention and Control 2021). Reported by WHO as of 28 March 2021, the heaviest burden by absolute numbers of cases was on France (over 4.39 million), followed by the UK and Italy (World Health Organization 2021). Finland, on the other hand, has suffered relatively little of the crisis, with a cumulative total of 74,754 cases and 817 deaths reported as of 28 March 2021 (World Health Organization 2021). This placed Finland as the European country with the lowest number of cases per 100,000 and the third lowest number of deaths per 100,000 after Iceland and Norway. A detailed account of Finland's pandemic response is, therefore, warranted to enable future evaluation on factors that could facilitate such outcomes. In their analysis published in April, Oksanen et al. (2020) investigated links between societal factors, restrictions and COVID-19 mortality in 25 European countries; however, this study only included a small number of national response measures, providing valuable but limited information. Similarly, a study by Nanda et al. (2021) briefly reviewed a narrow selection of health system-related response measures up to autumn 2020 but their main focus was on epidemiology of COVID-19 in the Nordic countries. A more comprehensive report by Tiirinki et al. (2020) examined the legal basis, implementation and impact of Finland's COVID-19 policies up to August 2020 but their account did not include travel restrictions across national borders. Therefore, it is worthwhile to offer a chronological timeline, with a social science-centred perspective, of Finland's policies during the pandemic year (including travel restrictions and excluding economical measures). This study describes and discusses the public health measures and health policy actions taken by the Finnish Government and other authorities to contain the COVID-19 pandemic in Finland from 1 January 2020 to 28 March 2021.

2 AIMS

2.1 General aims

The general aim of the study is to describe and discuss the policy actions taken by the Finnish Government and other authorities in response to the COVID-19 pandemic in Finland.

2.2 Specific aims

More specifically, the aim is to discuss the legal basis, implementation, public compliance to, and human rights implications of adopted public health measures (including both obligatory decisions and voluntary recommendations) in a chronological order:

(1) first response to the emerging pandemic during spring 2020;
(2) partial lifting of restrictions during summer 2020; and
(3) adopting the hybrid strategy during autumn 2020; and
(4) entering the era of vaccinations during late 2020 and early 2021.

3 METHODS

The thesis was written in two parts:

(1) a comprehensive narrative literature review (*i.e.*, this thesis) and
(2) an article version, which was sent for publication in a refereed scientific journal.

Data was collected by using the information provided at the official websites of the Finnish Government, ministries, other authorities and other reliable actors. Reports, press releases and other publications written in English were preferred; documents written in Finnish were also accepted when no English counterparts were available.

Response measures and policies aiming to curb the spread of the disease were included in the study; measures to mitigate the impact of the pandemic (and, importantly, of the response measures) on the country's and individuals' economy, education, or work life were not included. Main strategies and policies within the health system were discussed only in brief, keeping the main emphasis on general societal policies.

The time frame included in the study was from 1 January 2020 to 28 March 2021.

4 THEORETICAL BACKGROUND

4.1 Finland's country profile

4.1.1 Economy, demographics and health overview

Republic of Finland is a country in Northern Europe, with land borders against Sweden, Norway and Russia. Finland has a land area of 338,465 km^2 and a population of 5.5 million people, yielding a population density of 18 persons per km^2 – considerably lower than the EU average, 118 persons per km^2. The density ranges from 2 persons per km^2 in Lapland to 3,000 persons per km^2 in the Helsinki metropolitan area (Uusimaa province), home to Finland's capital and 30% of the country's population. In 2019, 87.3% of the population spoke Finnish as their main language, while 5.2% spoke the other official language Swedish and 7.5% some other language. Persons with tertiary or higher level education accounted for about 30% of the population. Unemployment rate was 6.7% in 2019, with 11.8% of the population at risk of poverty (disposable monetary income less than 60% of the median income) in 2018. The median monthly income of salary earners was EUR 3,398 for men and EUR 2,827 for women in 2018. Finland's GDP was EUR 43,484 *per capita* in 2019, higher than the EU average but lower than the other Nordic countries. Almost half (45%) of Finnish households belong to single persons. (Eurostat 2020, OECD 2020b, Statistics Finland 2020)

Finland has an aging population: in 2019, 62% were of working age (15 to 64 years old) and 22.3% were over 64, yielding a demographic dependency ratio (persons younger or older than working age, per 100 working-age persons) of 61, higher than the EU average. The number of deaths exceeded live births, resulting in a negative natural population increase (–1.5‰); the total change remained above zero (at 1.8‰) due to slightly higher net immigration (2.8‰). Life expectancy at birth was 81.9 years in 2019, about one year higher than the EU average. However, from age 65, Finns spend more than half of their remaining years of life with chronic diseases or disabilities. In addition, there is a five-year gender gap in life expectancy (84.5 for women vs 79.2 for men) due to higher rates of cardiovascular, accidental and violent deaths among working-age men compared to women. There is also an education gap in life expectancy, mainly due to higher rates of smoking and other risk factors among less educated persons (especially men). While the overall smoking rate in Finland has decreased to 14%, binge drinking (34%) and obesity (20%) rates remain clearly above the EU averages. Top three causes of death for both genders include cardiovascular diseases, cancer and dementia. (OECD 2019, Statistics Finland 2020, World Bank 2020)

4.1.2 Health system characteristics and organization

Finland spent 9.0% of its GDP (EUR 3,829 *per capita*) on health in 2018, less than the EU average. Finland's health financing comes from various sources. Public sources, which account for 76% of total health expenditure, include the municipalities, the state, and the National Health Insurance (NHI). Most of these funds originate from state and municipal taxes, while the state also subsidises municipal health care services. The NHI, governed by the Social Insurance Institution (Kela), reimburses outpatient pharmaceuticals and health-related transport costs, finances sickness and maternity allowances, and partially subsidises private and occupational health care services. The remaining 24% of total health expenditure arises from private sources of financing, mainly out-of-pocket payments. This level of cost-sharing is higher than the EU average and arises from user fees covering most services, with few exemptions such as services for minors, maternity and child health clinics, and treatment of certain infectious diseases listed in the Communicable Diseases Act (1227/2016). Annual payment caps are in force but do not include *e.g.* dental care, medicine co-payments, or transport costs (the latter two have their own separate annual caps). (Keskimäki et al. 2019, OECD 2019)

The administration of Finland's publicly funded health care is highly decentralised. Primary care is provided by the country's 311 municipalities, individually or jointly, at health centres. All registered residents in a municipality are entitled to receive basic services such as health care and coverage by the NHI; undocumented migrants are the only group excluded from full health coverage. Other types of primary care include private health care, which is financed by user fees and partial reimbursement by NHI, and occupational health care, which is mandatory for most employers and offers employees a notable advantage over non-employed people due to same-day access and absence of user fees. Publicly funded specialised care, which requires referral for access, is organised by municipalities *via* 20 hospital districts and five university hospitals. As for physical resources, Finland has 3.6 hospital beds per 1,000 population and an estimated total of 300 ICU beds. Finland has the highest number of nurses *per capita* among EU member states, but the number of physicians is below the EU average. Pharmaceutical care is provided by 800 private, pharmacist-owned community pharmacies. Hospital pharmacies do not sell medicines to outpatients but provide pharmaceutical services for inpatient care. Most pharmaceuticals are imported, which is why certain stakeholders are legally obliged to keep emergency stocks of essential medicines and medical care devices. (Association of Finnish Pharmacies 2020, Keskimäki et al. 2019, OECD 2019, 2020c)

Finnish health care is renowned for its high quality, especially as regards to specialised care. Amenable mortality (deaths by treatable causes) was clearly below the EU average in 2016, reflecting effective and timely provision of health care. Finland's low 30-day mortality rates following acute myocardial infarction and stroke indicate effective acute care in hospitals. Cancer survival rates are higher than EU average for most cancers, except for lung cancer – there is, therefore, room for improvement. Similarly, hospital admissions for chronic diseases (potentially avoidable by effective chronic disease management in primary care) remained well below the EU average for asthma and chronic obstructive pulmonary disease (COPD) but not for diabetes and congestive heart failure. Despite the generally good coverage and quality of health services, long waiting times and extensive out-of-pocket costs still give rise to socioeconomic inequities, which are exacerbated by the access of higher socioeconomic groups to private and occupational health care. For years, Finnish policy makers have tried to formulate a comprehensive health care reform to improve equitable access to health care, coordination of care between service delivery units, and effective allocation of resources. While the current Government has strong intentions to finalise such reform, it remains to be seen whether they will have enough time to do so amidst handling the COVID-19 pandemic. (Keskimäki et al. 2019, OECD 2019)

4.1.3 Government and policy process

Republic of Finland is a parliamentary republic where the 200-member Parliament exercises the highest legislative and budget power. The role of the President of the Republic is to act as a ceremonial head of state and Supreme Leader of the Defence Forces with some executive powers related to passing legislation, appointing officials and invoking emergency powers. The highest executive power is enacted by the 12-ministry Government, which has to enjoy the confidence of the Parliament. The Parliament makes decisions on legislation based on Government proposals, MP's motions or Citizen's Initiatives. Each proposal first undergoes preliminary debate, followed by consideration by a Parliament Committee that finally gives a recommendation to pass, modify or reject the bill. After the Parliament votes on the matter, the bill is confirmed by the President. If the President refuses to sign the bill, it is returned to the Parliament, which may still decide to confirm the bill. This legislative process may take months to years if the bill is extensive, but urgent bills may be processed within a few days. For bills affecting the Constitution, the process is more complicated and requires votes across two elected Parliaments or a near-unanimous declaration of urgency and two-third majority. (Office of the President of the Republic of Finland 2020, The Finnish Parliament 2020b)

Finland became independent in 1917 from the Russian rule, which was preceded by being a part of Sweden until 1809. The nation experienced hard times during the Second World War upon the war against Soviet Union and subsequent re-building of the society and re-settlement of the Karelian refugees across the country. This hardship was met with relentless effort and unification of the people that slowly led to a growing economy and establishment of a Nordic welfare state. Finland has a long history of equality in politics; even the pre-independence Parliament of 1907 had 19 women MPs, first ones in the world. Currently, 47% of MPs and 58% of Government ministers are women, including the Prime Minister. As of the 2019 elections, the biggest party in the Parliament is the Finnish Social Democratic Party, followed by the Finns Party and the National Coalition Party. The Government, however, was formed with the Finnish Social Democratic Party, the Centre Party and the Green League as main parties, which shared the consensus of a more climate-ambitious and human rights-centred Government Programme than the previous Government's more economy-driven programme. Finland is a Member State of the EU since 1995 and belongs to Euro and the Schengen area. (Statistics Finland 2020, The Finnish Parliament 2020a)

4.1.4 Legislation and authorities related to the control of infectious diseases

In Finland, the Communicable Diseases Act (1227/2016) constitutes the main legislation governing procedures for responding to cases or outbreaks of infectious diseases. The Act defines *e.g.* (1) certain terms such as *generally hazardous* and *monitored communicable diseases*, (2) organization of control activities and authorities **(Table 1)**, (3) procedures pertaining to infected persons and contact tracing, (4) communicable disease notifications, (5) vaccinations, and (6) measures to control the spread of infections. Under the Act, the Government Decree on Communicable Diseases (146/2017) specifies (a) which infectious diseases are classified as generally hazardous or monitored, (b) the duties for each control authority, and (c) certain details about communicable disease notifications. Other relevant pieces of legislation include the Primary Health Care Act (66/1972) and Health Care Act (1326/2010) governing the local and regional-level control of infectious diseases; the Act on the National Institute for Health and Welfare (668/2008) and Act on the Population Information System and the certificate services of the Digital and Population Data Services Agency (661/2009) governing authorities' right of access to information when investigating outbreaks to prevent serious epidemics; the Act on the Status and Rights of Patients (785/1992) governing the treatment of patients in isolation; and the Health Insurance Act (1224/2004) governing the *sickness allowance on account of an infectious disease*.

Table 1. Finnish authorities relevant to infectious disease control activities according to the Communicable Diseases Act (1227/2016).

Level	Authority	Duties
National	Ministry of Social Affairs and Health (MSAH)	General planning, steering and monitoring; emergency preparedness and leadership
	Finnish Institute for Health and Welfare (THL)	National expert institution; research, surveillance systems, information, recommendations, reporting to the EU, vaccination programme
	Advisory Board on Communicable Diseases	Expert body affiliated with the MSAH
Regional	Regional State Administrative Agencies (RSAAs)	Coordinate and monitor regional control activities and preparedness
	Joint municipal authorities for hospital districts	Guide and support municipalities and health care units; develop diagnostics and treatment; investigate epidemics and outbreaks; control of health care-associated infections
Local	Municipalities	Organise the control of infectious diseases under the Primary Health Care Act (66/1972), Health Care Act (1326/2010) and Communicable Diseases Act (1227/2016)
	The Defence Forces, the Finnish Border Guard, the Prisoners' Health Care Unit, state mental hospitals, state residential schools, the police	Are authorised to make municipality-level decisions pertaining to persons within the remit of their health care services

In the context of controlling infectious disease epidemics, a central concept is a '*generally hazardous communicable disease'*. It is defined by the Communicable Diseases Act as highly contagious, hazardous, and containable *via* interventions on a person who is infected, exposed to the infectious agent, or plausibly suspected of being infected or exposed. The Act enables a vast array of measures to prevent the spread of generally hazardous communicable diseases, including some that limit the basic rights of individuals, *e.g.* compulsory health examinations, vaccination, isolation, treatment, medication, quarantine or waiving patient confidentiality. It also enables local or regional closures of health care units, schools and other premises as well as bans on public gatherings. Decisions about these interventions are made by public-service

physicians in charge of communicable diseases employed by the municipalities and Regional State Administrative Agencies (RSAAs), guided by the expertise of the Finnish Institute for Health and Welfare (THL) and joint municipal authorities for hospital districts.

If, however, the Government deemed it necessary to issue additional restrictions such as nationwide suspension of contact teaching or limiting people's movement within the country, it would not be possible *via* ordinary legislation. Instead, the Government may declare a national state of emergency if they find, in cooperation with the President of the Republic, that the situation fulfils the criteria for emergency conditions stated in Part I, Chapter 1, section 3 of the Emergency Powers Act (1552/2011). The main purpose of declaring the state of emergency is to implement the extraordinary powers defined in Part II of the Emergency Powers Act: in addition to the aforementioned restrictions, *e.g.* the prioritisation of health care resources by waiving 'care guarantee' times (maximum waiting times for non-urgent care) and ensuring workforce capacity in health care by waiving certain employment regulations and imposing an obligation on health care personnel to do emergency work. Regardless of emergency conditions prevailing, these powers may only be implemented when ordinary legislation does not suffice, and only to the extent and in ways necessary and proportionate to the purpose of the Act: *"to protect the population and its livelihood as well as national economy, maintain law and order, basic and human rights as well as to secure the territorial integrity and independence of the nation under extraordinary circumstances"*.

With regards to imposing travel restrictions upon a pandemic, Finland's border control is mostly subject to EU legislation. Directive 2004/58/EC guarantees EU citizens and their family members the freedom of movement within the Schengen area – which, however, can be restricted upon potential epidemics deemed by WHO as public health threats. Regulations for crossing *external borders* (*i.e.* borders between EU Member States and non-member states), border checks, and conditions for entry of third-country nationals are given in the Schengen Borders Code (562/2006). Title III, chapter II of this Code dictates that Member States may temporarily reinstate border controls on their *internal borders* upon "a serious threat to their public policy or internal security". According to national legislation in the Border Guard Act (578/2005), such reinstatement is decided by the Government or, in urgent cases, Ministry of the Interior. The Act also grants the aforementioned authorities a right to temporarily close border crossing points upon such threat.

4.2 Past and present novel coronavirus outbreaks and associated containment measures

4.2.1 Severe acute respiratory syndrome (SARS)

Human coronaviruses (HCoVs) such as HCoV-229E and HCoV-OC43 have been known for decades as ubiquitous culprits for common cold, rarely causing anything more sinister than a normal case of rhinitis in healthy individuals (van der Hoek 2007). The first noteworthy threat to public health by a HCoV started from Guangdong province, China in 2002–2003, when the previously unknown severe acute respiratory syndrome coronavirus (SARS-CoV) ultimately infected over 8,000 people in 25 countries, resulting in nearly 800 fatalities (10%) (Peiris et al. 2004). The clinical presentation of SARS included flu-like respiratory symptoms, often also diarrhoea; 20–30% of patients developed acute respiratory distress syndrome (ARDS), which was a major cause of fatal outcomes (Graham et al. 2013, Malave & Elamin 2010). The outbreak was successfully contained within a few months through recommendation from WHO against non-essential travel to affected areas in China and traditional public health measures such as personal protection for health care workers and voluntary quarantines for symptomatic persons with known contacts to SARS patients (Malave & Elamin 2010).

4.2.2 Middle East respiratory syndrome (MERS)

A decade later, another HCoV causing remarkably similar symptoms emerged in the Arabian Peninsula: the Middle East respiratory syndrome coronavirus (MERS-CoV) (Zaki et al. 2012). The MERS outbreak did not exhibit the fast, extensive global spread that the SARS epidemic did, but it has never fully stopped; 2,442 people had been infected and 842 (35%) killed between 2012 and end of May 2019 (Donnelly et al. 2019). While both of these viruses seem to be more deadly in elderly patients with comorbidities, cause ARDS *via* atypical pneumonia with cellular infiltration, and originate from zoonotic reservoirs (bat as the original host in both cases), they also have some differences: MERS-CoV seems to deviate from other HCoVs in terms of its phylogenetics (*i.e.* evolutionary relationships between viruses), functional receptor used, and cell types infected (Graham et al. 2013). In addition, it appears that MERS-CoV is transmitted mainly from dromedary camels to humans, and human–human transmission only occurs in close contact conditions such as within families or in a hospital care setting (World Health Organization 2020d). For this reason, containment measures for MERS focus on hygiene when handling camels as well as early detection and isolation of cases in health care, especially regarding travellers from the Middle East.

4.2.3 Coronavirus disease 2019 (COVID-19)

The current COVID-19 epidemic started in December 2019, when cases of pneumonia with unclear aetiology started to appear in Wuhan City, Hubei province in China (Zhu et al. 2020) **(Figure 1)**. The Chinese Center for Disease Control and Prevention (CCDC) identified the cause to be a novel coronavirus related to SARS in early January 2020, after which it was tentatively named *'2019 novel coronavirus'* (2019-nCoV). The first three cases of COVID-19 imported into Europe appeared in France on 24 January, followed by four cases with indirect links to Wuhan in Germany on 28 January (European Centre for Disease Prevention and Control 2020d). Finland was also among the first European countries to experience an imported case, which was encountered on a Chinese tourist from Wuhan in Lapland on 29 January (Haveri et al. 2020, Yle News 2020). On 30 January, when the disease had already spread to 19 other countries apart from China, WHO declared the outbreak a *Public Health Emergency of International Concern*, which is defined in the International Health Regulations as an event that poses a public health threat beyond the country of origin and may require a coordinated international effort to overcome (World Health Organization 2016, 2020a).

A few days before declaring the pandemic, on 7 March 2020, WHO published a guideline on how to combat the epidemic (World Health Organization 2020f), which was summarised by WHO Director-General in his speech on 9 March, stressing the importance of health care preparedness, overall hygiene measures, and *"an all-of-society, all-of-government approach"* (World Health Organization 2020h). In addition, testing, tracing and isolation (TTI) strategies should be the main focus in countries with *no cases*, *sporadic cases*, or *clusters of cases* (categories defined in World Health Organization 2020c). For countries with *community transmission* – such large numbers of cases that tracing back individual contacts becomes very difficult – lockdown measures may be necessary **(Table 2)**. Even earlier, in February 2020, the ECDC had published their own recommended non-pharmaceutical interventions (NPIs) **(Table 2)** (European Centre for Disease Prevention and Control 2020c). The report emphasised adjusting the measures to country-specific situation, *i.e.* whether the epidemic is in the *containment phase* (containable by addressing individual cases) or *mitigation phase* (widespread transmission in the community), analogously to the categories used by WHO. Similarly, a report by the OECD (2020a) published on 24 March suggested that sustainable long-term solutions may entail considering containment and mitigation interventions as a continuum of the same strategy, where policies are gradually relaxed or strengthened according to current epidemic situation.

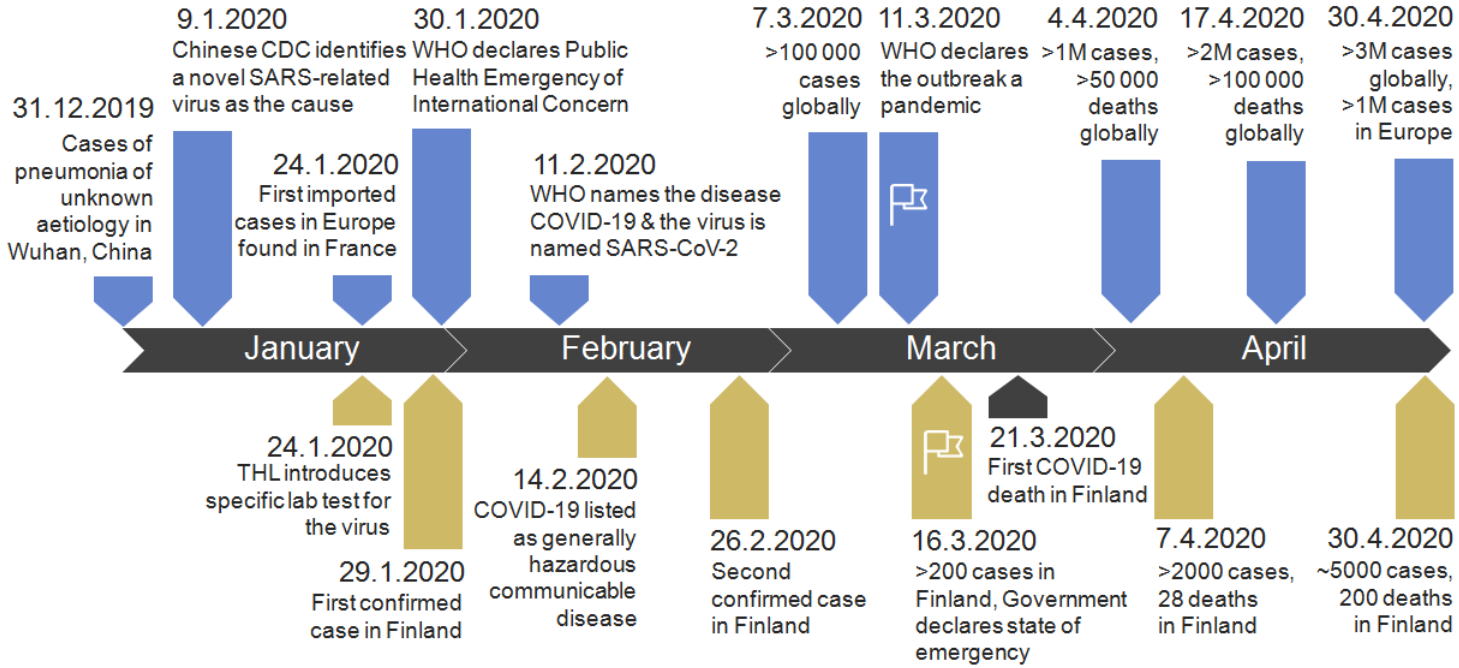

Figure 1. Timeline of key events during the COVID-19 pandemic from January to April 2020. Blue = global situation; brown = situation in Finland; black = first COVID-19-related death in Finland; flag = important landmarks. CDC, Center for Disease Control and Prevention; COVID-19, coronavirus disease 2019; SARS, severe acute respiratory syndrome; SARS-CoV-2, SARS coronavirus 2; THL, Finnish Institute for Health and Welfare.

Table 2. Measures for containing the COVID-19 pandemic recommended by WHO and European Centre for Disease Prevention and Control (ECDC) from February to June 2020.

ECDC, February 2020	WHO, March 2020	ECDC, June 2020
Combination of measures tailored to the situation in the country (*containment* or *mitigation phase*): ▪ personal protection, *e.g.* hand and respiratory hygiene ▪ environmental cleaning ▪ social distancing, *e.g.* quarantines, self-isolation, school closures, workplace measures, mass gathering cancellations ▪ travel restrictions	**For all scenarios:** ▪ public engagement ▪ health system preparedness ▪ infection prevention and control (IPC) in health care settings ▪ preventive public health measures, *e.g.* hand hygiene, respiratory etiquette, social distancing ▪ testing, tracing and isolation (TTI) **For countries with *community transmission*:** ▪ lockdown measures, *e.g.* school closures, bans on mass gatherings	**For all scenarios:** ▪ testing all symptomatic cases with contact tracing ▪ isolation of cases and quarantine of contacts ▪ voluntary physical distancing (safety distances, avoidance of gatherings, working remotely) ▪ wearing mask when safety distances are not possible ▪ hand and respiratory hygiene ▪ risk communication **For countries with increased transmission:** ▪ lockdown measures (sub-national, targeted), *e.g.* closures of public spaces, workplaces or public transport

The ECDC updated their NPI guidelines on 11 June 2020 (European Centre for Disease Prevention and Control 2020a), after the first pandemic wave had waned in Europe and countries started to lift their lockdown measures. Therefore, countries in a stable situation or with increased transmission were given each their own recommendations **(Table 2)**. For the latter, lockdown measures were one option but should be carefully considered regarding their negative consequences and preferably implemented at a regional level. In particular, ECDC urged for a strong risk communication strategy *"to remind citizens that the pandemic is ongoing"* (European Centre for Disease Prevention and Control 2020a). 'Social bubbles' (Block et al. 2020) were suggested as means of physical distancing, entailing an active social life but consistently with the same group. The report questioned the effectiveness of school closures and traveller quarantines, recommended to avoid border closures, and suggested

targeted interventions, *e.g.* masks for specific risk groups or health care professionals, or mass testing vulnerable populations (European Centre for Disease Prevention and Control 2020a).

The global COVID-19 situation did, indeed, show suppression in cases where comprehensive intervention strategies were introduced early on. For example, some of China's bordering countries were able to contain the epidemic at an early stage: South Korea *via* extensive, technology-assisted TTI measures (Lee & Choi 2020, OECD 2020a) and Mongolia *via* timely travel restrictions, supervised quarantines and school closures (Erkhembayar et al. 2020). Italy, COVID-19's main entry hub into Europe, was the first European country to impose full lockdown on 11 towns in the "red zone" of the North Italian region of Lombardy in late February (Bruno & Winfield 2020). The towns were isolated from other regions, all non-essential events and businesses were cancelled, and people were told to stay at home. This was followed in early March by movement restrictions to and from most of the country's north as well as a nationwide stay-at-home order and closure of schools, restaurants and public spaces (European Centre for Disease Prevention and Control 2020b, Horowitz 2020). By mid-March 2020, most countries in the EU/EEA–UK region had adopted NPIs to counter the pandemic: all issued a ban on mass gatherings, almost all closed schools and public spaces, and approximately half of the countries issued obligatory stay-at-home orders, according to a dataset published by the ECDC as of 1 July **(Figure 2)** (European Centre for Disease Prevention and Control 2020b). More than half of those countries also imposed orders for wearing mask and working remotely at some point between February and July.

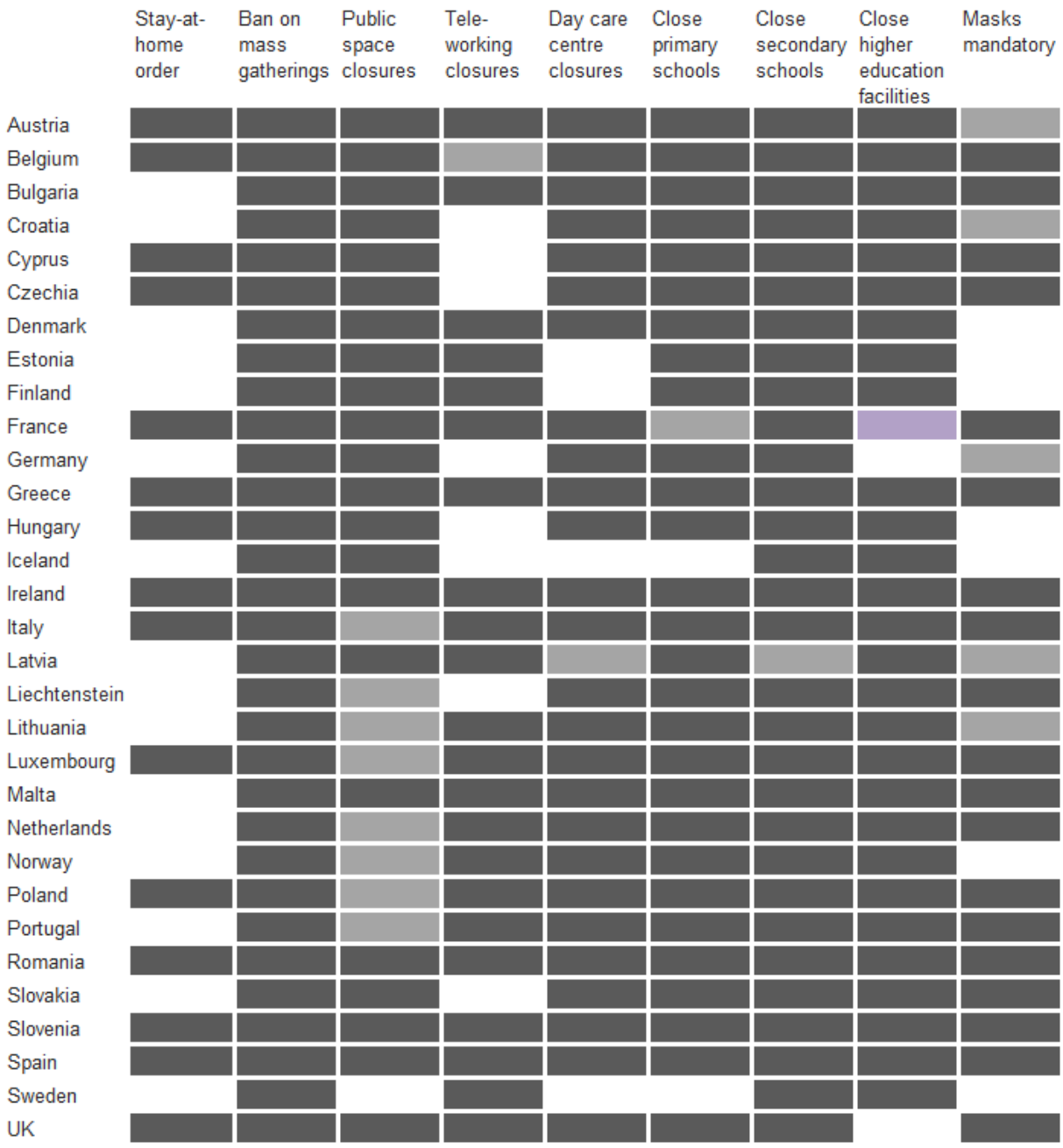

Figure 2. Public health measures issued by 31 countries in the EU/EEA and UK region in response to COVID-19 as of 1 July 2020. Dark grey = measure; light grey = partial measure; white = no measure. (Data: European Centre for Disease Prevention and Control 2020b.)

5 SPRING 2020: FIRST RESPONSE TO THE EMERGING PANDEMIC

5.1 Early reactions to the emerging pandemic threat

Finland started preparing for the emerging pandemic at an early stage. On 24 January 2020, Finnish Institute for Health and Welfare (THL) published guidelines for tourists travelling to China, introduced a specific laboratory test for detecting 'Wuhan coronavirus' **(Figure 1)**, and tested samples of two tourists from Wuhan with flu symptoms – yielding a negative result (Finnish Institute of Health and Welfare 2020f, 2020i, 2020q). At an EU health ministers' videoconference on 7 February, the Finnish Minister of Family Affairs and Social Services reassured that Finland's health system was well-prepared to deal with the situation (Ministry of Social Affairs and Health 2020c). On 14 February, severe infections caused by novel coronaviruses (other than SARS and MERS) were added to the list of generally hazardous communicable diseases in the Government Decree on Communicable Diseases (Ministry of Social Affairs and Health 2020i). This classification granted the authorities powers to impose various decisions under the Communicable Diseases Act upon the community and individuals to prevent the spread of the disease.

The second case of COVID-19 in Finland, which was imported from Italy, emerged on 26 February 2020, almost one month after the first case (World Health Organization 2020a). The next four cases appeared on 2 March, switching Finland from *"imported cases only"* to *"local transmission"*. On 12 March, the Government gave recommendations to cancel all events of more than 500 attendees, to restrict any close-contact leisure activities, and for travellers to cancel all non-essential trips and to stay away from work or school for two weeks after returning from affected areas (Finnish Government 2020j). Health and educational system workers, in particular, were advised to stay at home at a low threshold if they felt any flu symptoms or suspected an exposure to the virus (Ministry of Education and Culture & Ministry of Social Affairs and Health 2020). The Government issued a Decree (108/2020) on the right of state employees to call in sick with suspected COVID-19 by phone call to a health professional instead of a medical examination in person. The number of cases kept increasing rapidly **(Figure 3)**, mid-March marking a cumulative total of 267 cases and the first fatality occurring on 21 March (World Health Organization 2020a). By the end of March, Finland had reported over 1,300 confirmed cases of COVID-19 and 13 deaths related to COVID-19. Only one month later, on 30 April, these numbers had multiplied to nearly 5,000 cases and over 200 deaths, making April the peak month of Finland's first wave of the COVID-19 pandemic **(Figure 3)** (World Health Organization 2020a).

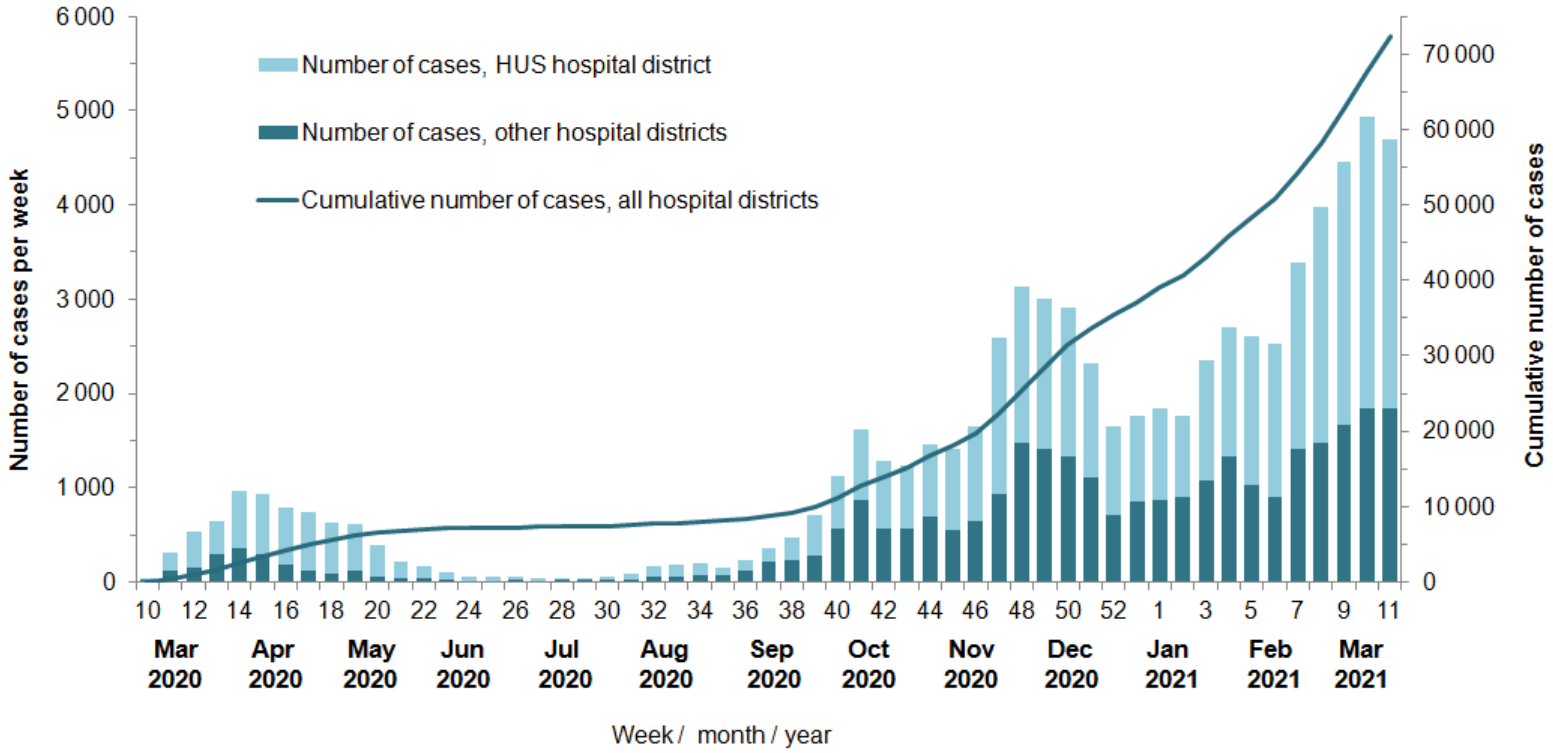

Figure 3. Weekly number of confirmed COVID-19 cases in the largest hospital district (HUS) vs other hospital districts (bars; left axis) and cumulative number of cases in all hospital districts (line; right axis) in Finland from March 2020 (week 10) to March 2021 (week 11). (Data: Finnish Institute for Health and Welfare 2021a.)

5.2 Implementation of the Emergency Powers Act

The Finnish Government decided on 16 March 2020, after having first convened with the President and the Ministerial Committee on Foreign and Security Policy, that the COVID-19 pandemic fulfilled the criteria for an emergency situation as a *"highly wide-spread, hazardous communicable disease with particularly severe consequences, comparable to a mass disaster"* defined in section 3, paragraph 5 of the Emergency Powers Act and also as a *"particularly serious event or threat to the livelihood of the population or the fundamentals of national economy, with the potential of essentially endangering necessary functions of society"* defined in section 3, paragraph 3 of the Act (Finnish Government 2020o, Prime Minister's Office 2020). Therefore, a state of emergency was effectively declared **(Figure 1)**. The Decrees for implementing the Act **(Table 3)** entered into force either immediately (for Decree 124/2020) or on 18 March and remained in force first until 13 April, after which they were continued until 13 May (Finnish Government 2020b, 2020r).

The main emergency powers adopted included the following nationwide decisions **(Table 3)**:

(1) handing over the control of health and social care units to the MSAH and Regional State Administrative Agencies (RSAAs);
(2) ensuring the supply of medicines and other health care products by restricting their sales or otherwise exercising control over the businesses in charge of their supply;
(3) prioritisation of health and social care: waiving maximum waiting times for non-urgent care and social care assessments to accommodate the care, testing and isolation of COVID-19 patients;
(4) ensuring the workforce resources in health care: waiving overtime and holiday regulations, obligation to do emergency work; and
(5) restricting the duty to organise contact teaching at schools and day care for children.

In addition, the metropolitan Uusimaa region – home to 30% of Finland's population, where the vast majority of COVID-19 cases were occurring – was isolated from the rest of the country from 28 March to 15 April, allowing people only to return to their municipality of residence or other types of essential travel for work-related or personal compelling reasons (Finnish Government 2020p, 2020ff).

Table 3. Emergency powers implemented in Finland due to the COVID-19 pandemic.

Decree (in force)	**Section of the Emergency Powers Act**	**Powers**
124/2020 (17.3.–13.4.) **175,176/2020** (14.4.–13.5.) **309/2020** (14.5.–30.6.)	87	The sales of medicines, goods and services used in health care may be restricted (effective immediately). *Amended on 14.4. (176/2020) with powers to control health care businesses in every aspect stated in section 87.*
125/2020 (18.3.–13.4.) **174/2020** (14.4.–13.5.) **308/2020 *** (14.5.–30.6.)	86	Control of health care and social welfare units to MSAH and Regional State Administrative Agencies.
	88, 93, 94, 109	Restrictions to day care, education, employment regulations; waiving the maximum waiting times in health care (see below). ** 308/2020 did not apply to day care or school restrictions*
126/2020 (18.3.–13.4.) **191/2020** (14.4.–13.5.)	88	Municipality may waive the duty of organising day care if the parents can otherwise organise their children's care.
	109	Schools have no duty to organise contact teaching and may deviate from the amount of teaching, except for pupils in pre-school, grades 1–3, or with special support decision.
127/2020 (18.3.–13.4.) **197/2020** (14.4.–13.5.)	88	Municipality may deviate from the maximum waiting times for non-urgent care and waive social care assessments.
128/2020 (18.3.–13.4.) **190/2020** (14.4.–13.5.)	93	Health and social care, rescue services, emergency response centres and the police may deviate from regulations concerning daily rest periods, overtime, and annual holidays.
	94	The employer may extend the employee's period of notice for termination by a maximum of four months in health and social care, rescue services and emergency response centres.
139/2020 (26.3.–13.4.) **177/2020** (14.4.–13.5.)	95	Every health care professional between 18 and 68 years of age, residing in Finland, is obliged to do emergency work for a maximum of two periods of two weeks if called to do so.
	96–103	Details about practical arrangements of emergency work.
145,146/2020 (28.3.–19.4.) **217/2020** (15.4.)	118	Restriction of movement to and from Uusimaa, except to return to place of residence or for essential work, legal or personal reasons such as deceased relative or parental visit to a child.

For the sake of clarity, the Decrees are shown as up-to-date (as of 30.9.2020), without earlier versions.

5.3 Obligatory lockdown measures

Figure 4 shows a timeline of main restrictions and guidelines from March 2020 to March 2021. Obligatory restrictions as of 18 March 2020 (Finnish Government 2020o) included:

(1) prohibited public events and gatherings of more than 10 attendees;
(2) closed all public spaces such as cultural venues, libraries, leisure centres, sports facilities and elderly people's day care services;
(3) closed all educational facilities and suspended contact teaching therein, except for pupils in preschool, grades 1–3 of primary school or with a special support decision;
(4) ordered public sector employers to make all employees work remotely if their duties permitted; and
(5) prohibited visits to health care units, hospitals and housing services for the elderly or disabled, except for people visiting their own children or critically ill patients.

The suspension of contact teaching in schools was based on the Emergency Powers Act, whereas the other restrictions were based on ordinary legislation, mainly the Communicable Diseases Act. Originally, the exemption to the suspension of contact teaching in schools was to be applied only to those pupils in grades 1–3 of primary school whose parents work in areas critical to the functioning of society, but this condition was revoked because the Constitutional Law Committee of the Parliament expressed concern that the critical areas of work should have been more precisely defined, especially as to the rationale behind this definition (Constitutional Law Committee 2020).

Other lockdown measures imposed by the Government later in spring 2020 **(Figure 4)** included:

(6) the closing of Uusimaa provincial border under the Emergency Powers Act from 28 March to 15 April (Finnish Government 2020p, 2020ff) and
(7) the closing of restaurants and bars, except for take-away food sales and personnel canteens, from 4 April to 31 May (Finnish Government 2020gg).

For the latter, the Government passed a new Act (153/2020) on temporarily amending the Act on Accommodation and Catering Services (308/2006) with section 3a governing the temporary closing of restaurants during an epidemic **(Table 4)**. The new Act was in force from 30 March to 31 May 2020. Regions where restaurant closures were to take place were specified in a separate Government Decree (173/2020), which was in force from 4 April to 31 May 2020; the list included all 19 of Finland's provinces, rendering the closure nationwide.

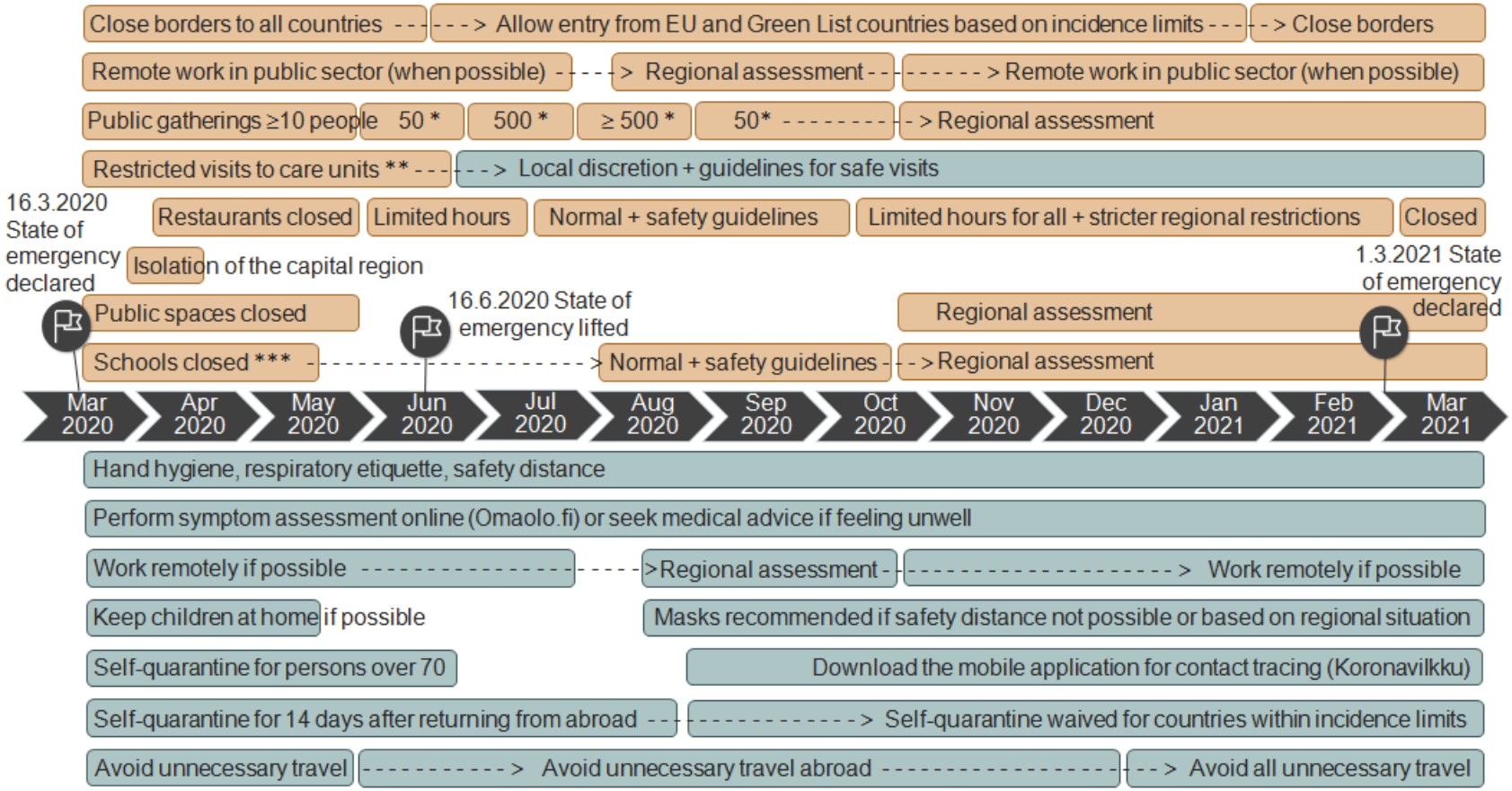

Figure 4. Timeline of key decisions (red boxes) and recommendations (blue boxes) by the Finnish Government to contain the COVID-19 pandemic from March 2020 to March 2021. *Gatherings of up to / over 500 attendees were allowed if certain conditions were met; **The visit ban was first issued as if it were mandatory but was not based on any law; ***School closures did not apply to pre-schools, grades 1 to 3, or pupils with a decision on special-needs support. Contact teaching was resumed for primary and lower secondary schools on 14 May 2020.

Table 4. Changes made to Finnish ordinary legislation due to the COVID-19 pandemic between March and September 2020.

Act (in force)	**Pursuant to**	**Content**
Act **153/2020** (30.3.–31.5.)	Act on Accommodation and Catering Services (308/2006)	Amending the Act with section 3a: Keeping restaurants closed during an epidemic in affected areas, except for take-away services and personnel restaurants. *Related Decree: 173/2020*
Act **400/2020** (1.6.–31.10.)	Communicable Diseases Act (1227/2016)	Amending the Act with sections 58a, 58b: Defining restricted opening hours, alcohol-serving hours, limited numbers of customers, and procedures by which restaurants ensure safety distances and hygiene. *Related Decrees: 401/2020, 477/2020, 648/2020*
Act **515,516/2020** (1.7.2020 – 31.7.2021)	Universities Act (558/2009); Universities of Applied Sciences Act (932/2014)	A student may register as absent due to COVID-19. The university is not obliged to arrange teaching if it is not possible due to COVID-19 but students will then be granted extensions to their study right periods.
Act **521/2020** (1.7.2020– 31.7.2021)	Vocational Education and Training Act (531/2017)	A student may complete skills assessments by carrying out alternative practical tasks if it is not possible, due to COVID-19, to carry out real-life work duties in authentic situations at real workplaces, as intended.
Act **521/2020** (1.8.–31.12.)	Basic Education Act (628/1998)	Upon school closures or quarantine/isolation under the Communicable Diseases Act, teaching may be organised as remote teaching for one-month periods at a time.
Act **553/2020** (13.7.)	Medicines Act (395/1987)	MSAH may temporarily control the distribution and sales of a medicine facing reduced availability. Pharmacies must keep a two-week stock of ordinary medicines. Wholesalers must notify of supply problems immediately.
Act **554/2020** (13.7.)	Act on Obligatory Storing of Medicines (979/2008)	Fimea may issue orders to the medicine stock operator. The stock must be situated in Finland. MSAH may regulate the target levels of stockpiled medicines.
Act **555/2020** (13.7.)	Communicable Diseases Act (1227/2016)	MSAH may temporarily control the prescription and dispensing of infectious disease medicines and waive proper conformity assessment on medical devices.
Act **582/2020** (31.8.2020– 31.3.2021)	Communicable Diseases Act (1227/2016)	Amending the Act with section 4a: A voluntary, data-secure mobile application for contact tracing to break COVID-19 transmission chains, maintained by THL and the Social Insurance Institution of Finland (Kela).

5.4 Voluntary recommendations and guidelines

Much of Finland's response to the COVID-19 pandemic relied on voluntary, non-enforced recommendations and trusting the public to act responsibly. In late March, at the height of the surging case numbers, THL and other authorities published comprehensive social distancing guidelines with dos and don'ts for healthy individuals, at-risk groups, and people under voluntary quarantine **(Figure A1, Appendix 1)**. Main recommendations for the March–May period included, whenever it was possible, to (Finnish Government 2020o) **(Figure 4)**:

(1) practise hand hygiene, respiratory etiquette, and safety distances;
(2) practise social distancing by working remotely and avoiding social visits, in-person meetings and spending time in public places;
(3) keep the children at home;
(4) self-quarantine for people over 70 or with other conditions increasing the risk of severe disease;
(5) self-quarantine for two weeks if returning from abroad;
(6) avoid unnecessary travelling; and
(7) if experiencing flu symptoms but not in need of urgent medical care, stay at home, perform online symptom assessment at Omaolo.fi (Jormanainen et al. 2020) or seek medical advice by phone (Finnish Government 2020o).

5.5 Health system preparedness and testing, contact tracing

To address the pandemic situation, it was crucial to ensure adequate resources in health care for testing and treating COVID-19 patients and to minimise the risk of health care-associated infections. Finnish hospitals, primary care centres and private health care providers organised separate triage areas for patients with respiratory symptoms or suspected COVID-19 (Terveystalo 2020, Vaasa Central Hospital 2020). Prioritisation was carried out by allocating resources to COVID-19, while non-urgent care was scaled down (Ministry of Social Affairs and Health 2020h). At first, testing was limited to patients with severe respiratory symptoms and health care professionals (City of Kuopio 2020a). THL reported a testing capacity of 2,500 samples per day on 2 April (Finnish Institute for Health and Welfare 2020d). In mid-April, testing capacity was sufficient to start testing people with mild symptoms, especially if there was suspicion of exposure to SARS-CoV-2 (City of Kuopio 2020b). In mid-May, the capacity had reached 8,000 tests per day, and THL advised anyone with matching symptoms to get tested by contacting their normal health care provider (Finnish Institute for Health and

Welfare 2020g). People with confirmed COVID-19 were placed on *isolation* under the Communicable Diseases Act where they were separated from other people either at home or in a hospital. Their contacts were traced and placed on a 14-day *quarantine*, where they must stay at home and could only go outside for fresh air (but must not, for example, enter supermarkets or public transport) (Finnish Institute for Health and Welfare 2020o).

5.6 Medicine and medical device policy

The availability of medicines and other health care supplies was of high priority during the state of emergency, as shown by the immediate implementation of section 87 of the Emergency Powers Act. After a surge in sales of pain and fever medicines on 14–15 March, Finnish Medicines Agency (Fimea) urged people not to stockpile medicines (Finnish Medicines Agency 2020a). MSAH decided on 19 March that pharmaceutical wholesalers should prioritise the supply of medicines and medical products to pharmacies (Ministry of Social Affairs and Health 2020e). Pharmacies, in turn, should prioritise the ordering of such products, avoid ordering them in excessive amounts, and refrain from dispensing more than a three-month quantity of prescription medicines or the largest package of over-the-counter medicines. As of 14 April, this decision was extended until 13 May – and, ultimately, until 30 June – and amended with a restriction against dispensing salbutamol more than a one-month quantity due to abnormally increased demand (Ministry of Social Affairs and Health 2020f, 2020r). For similar reasons, in March, Fimea had discouraged pharmacies from dispensing hydroxychloroquine for atypical indications to ensure its availability for patients with chronic diseases and to preclude its unauthorised experimental use (Toikkanen 2020).

Face masks are widely used in the global context to prevent the spread of infections. To be precise, they constitute three separate products (Finnish Medicines Agency 2020b, Finnish Safety and Chemicals Agency 2020):

(1) *civil masks*, which are consumer goods under the Consumer Safety Act (920/2011), either reusable or disposable;
(2) *surgical masks*, which are medical devices under the Medical Devices Act (629/2010) and EU Medical Device Regulation (2017/745), requiring a CE marking; and
(3) *respiratory masks*, which are classified as personal protective equipment (PPE) and must meet the requirements of EU Regulation on personal protective equipment (2016/425).

Only PPE can protect the user from infection; the other products may protect others from being infected by the user. In spring, MSAH and THL did not recommend the use of civil masks by asymptomatic people because there was insufficient evidence of efficacy and even some concerns of harmful effects such as false sense of security, inhaling of fabric particles, or increased risk of infection due to improper use (Ministry of Social Affairs and Health & Finnish Institute for Health and Welfare 2020d). Furthermore, the Government's main priority was to ensure the availability of PPE for health care professionals, and MSAH decided to use PPE from state emergency stockpiling and join the EU Joint Procurement Agreement for medical supplies (Ministry of Social Affairs and Health 2020o). On 13 May, MSAH ordered 24-hour care staff to wear surgical or fabric masks or visors to protect their clients (Ministry of Social Affairs and Health 2020g).

5.7 Travel restrictions

Finland started restricting passenger traffic across its borders on 19 March 2020 **(Figure 4)**, closing border-crossing points and restoring controls at internal Schengen borders under the Border Guard Act (Ministry of the Interior 2020d). People were strongly advised not to travel abroad at all between 18 March and 13 April, although Finnish citizens and permanent residents cannot be prevented from leaving or entering the country according to the Constitution of Finland (731/1999). Freight traffic, leaving foreigners, returning Finns, and those travelling for necessary work reasons were allowed to cross the borders. Some of the crossing points at the Russian border, Finnish–Swedish and Finnish–Norwegian borders, and airports other than Helsinki-Vantaa, Mariehamn and Turku were closed for traffic. People were advised to stay in quarantine-like conditions for two weeks after arriving in Finland, although this requirement was not enforced and did not apply to freight or to rescue services personnel (Finnish Institute for Health and Welfare 2020h, Ministry of the Interior 2020d).

From 22 March onwards, the entry of foreigners was further restricted to only allow work commuters from local border communities in Sweden or Norway, with the exception of essential-field professionals such as health care or elderly care personnel from Estonia (Ministry of the Interior 2020b, 2020d). Finnish missions also suspended the processing of visa and residence permit applications as of 19 March (Ministry for Foreign Affairs 2020a). As more and more international flights were being cancelled due to the pandemic, some Finnish residents experienced difficulties to find commercial flights back home. Finland organised repatriation flights to assist returning tourists (Ministry for Foreign Affairs 2020b),

bringing home thousands of Finnish and European residents between March and May 2020 (News Now Finland 2020). As of 14 April, these restrictions were extended until 13 May and tightened by requiring certificates from employers about the essential nature of the work of each commuter (Finnish Government 2020g, Ministry of the Interior 2020e). The Government also advised maritime companies to stop selling passenger tickets for Baltic Sea cruises from 11 April onwards. As of 14 May, the restrictions were further extended until 14 June, but with mitigated rules: commuters were no longer required to prove essential work, although work-related reasons for entry were still needed, and cruise ships were allowed to restore their ticket sales (Ministry of the Interior 2020a, 2020c).

6 SUMMER 2020: GRADUAL LIFTING OF RESTRICTIONS

6.1 From state of emergency towards a hybrid strategy

As early as 8 April 2020, the Government appointed a working group to prepare the COVID-19 exit and reconstruction strategy for managing Finland out of the crisis with sustainable long-term solutions (Finnish Government 2020z). Based on the group's first report, the Government decided on a plan for a *hybrid strategy* on 4 May (Finnish Government 2020i). Objectives of the strategy comprise (1) preventing the spread of the virus, (2) securing adequate capacity of health care, and (3) protecting people at high risk for severe disease. Its methodology relies on a 'test, trace, isolate and treat' approach and the gradual replacement of national restrictions with targeted regional measures, based on regular monitoring of the epidemiological situation (Finnish Government 2020i). The steady decline in case numbers observed throughout May **(Figure 3)** enabled the commencement of this plan. Most of the lockdown measures were partially dismantled as of 14 May or 1 June **(Figure 4)**, usually with the support of new safety and hygiene guidelines. On 15 June, the Government decided that the epidemiological situation and the capacity of health care no longer required the use of extraordinary powers, and the state of emergency was lifted and the Emergency Powers Act repealed on 16 June (Finnish Government 2020hh).

To enforce ordinary legislation, the Government temporarily amended the Communicable Diseases Act to enable regional restrictions on the opening hours, alcohol-serving hours and customer limits of restaurants **(Table 4)**. To prepare schools for varying situations, the Basic Education Act was amended to enable remote teaching in case of school closures or student quarantines due to COVID-19 during autumn semester 2020. Higher education students were allowed to register as absent for COVID-19-related reasons or to apply for extension to their study right period if the university could not arrange teaching due to COVID-19 by amending the Universities Act and Universities of Applied Sciences Act. Similarly, vocational students were allowed to complete their skills assessments in alternative ways if it was not possible to do it in real work situations due to COVID-19 *via* amendment to the Vocational Education and Training Act. To ensure the availability of medicines in all situations, the Medicines Act, Act on Obligatory Storing of Medicines and Communicable Diseases Act were permanently amended on 13 July, strengthening the control of MSAH over medicine-related issues under certain situations and obligating pharmacies to maintain a two-week stock of commonly used medicines, among other regulations **(Table 4)** (Ministry of Social Affairs and Health 2020a).

6.2 Changes in restrictions and recommendations from June to August 2020

6.2.1 Lockdown measures

When the Decrees on the implementation of the Emergency Powers Act expired after 13 May 2020, the Government extended the exercise of some powers until 30 June by issuing new Decrees; however, this was not the case for powers concerning the duty to organise day care or contact teaching in schools **(Table 3)**. Contact teaching was thus resumed at primary and lower secondary level on 14 May (Finnish Government 2020L) **(Figure 4)**. Schools were given guidelines on how to arrange teaching safely – the cornerstones being good hand hygiene, spacious premises, no mixing of groups, and no large gatherings (Ministry of Education and Culture 2020). For upper secondary and higher level education, the Government allowed schools to use their own discretion but advised them to continue distance learning until autumn (Finnish Government 2020i). As mentioned in section 6.1, amendments were made on education laws to allow flexible addressing of deteriorated epidemic situations **(Table 4)**.

From 1 June 2020, the maximum number of attendees in public events both indoors and outdoors was increased to 50 persons (Finnish Government 2020a). Events with up to 500 attendees could also be organised indoors and in enclosed outdoor spaces (such as amusement parks, zoos, libraries and cinemas) if they met certain guidelines made by the Ministry of Education and Culture and THL (Ministry of Education and Culture & Finnish Institute for Health and Welfare 2020a) regarding hygiene and safety distances (Finnish Government 2020a, 2020x). Events with more than 500 attendees were prohibited until 31 July, with the exception of outdoor events with clearly separated areas or sections of up to 500 persons each that could be permitted as of 1 July (Finnish Government 2020q). As of 1 August, public gatherings of over 500 attendees were allowed, provided that they were organised in accordance to safety and hygiene guidelines (Finnish Government 2020cc).

As for public facilities, outdoor venues such as sports facilities were opened on 14 May, applying the public gathering limit of 10 persons until 1 June; 50 persons until 1 July; and 500 persons until 1 August (Finnish Government 2020i). Public indoor facilities such as libraries, museums and other cultural venues; sports, hobby and youth centres; and elderly day care services were opened on 1 June with safety and hygiene guidelines (Finnish Government 2020a). Sports competitions and camps for children and youth, likewise, resumed on 1 June.

Restaurants, bars and cafés were reopened on 1 June with restricted opening hours (6am to 23pm), alcohol-serving hours (9am to 22pm), and maximum number of customers (half of normal) under the amendments by Act 400/2020 and Decree 401/2020 to the Communicable Diseases Act **(Table 4)** (Finnish Government 2020a, Ministry of Social Affairs and Health 2020L). The restrictions were mitigated by a new Decree (477/2020) to nearly normal regulations as of 22 June, allowing buffets, longer opening hours (4am to 2am), alcohol-serving hours (9am to 1am) and more customers (3/4 of normal number) while still requiring a seat for every customer, safety distances, possibility for hand-washing, and visible instructions on safety and hygiene practices (Finnish Government 2020f). On 13 July, under the aforementioned Decree (477/2020), restaurants returned to operate within the boundaries of normal legislation governing restaurants and the serving of alcoholic beverages, except that they were still obliged to provide a seat for each customer and adhere to safety and hygiene guidelines (Finnish Government 2020f).

6.2.2 Voluntary recommendations

In accordance to the hybrid strategy, in late May, THL shifted the focus of its guidelines from restrictive social distancing towards enabling people to function and participate in society while following good practices of hygiene, safety distances, and staying at home when sick **(Figure A2, Appendix 2)**. The Government lifted the much-criticised ban on visits to health care units and hospitals on 17 June **(Figure 4)**, while advising to arrange the visits safely to protect risk groups and health care staff from infection (Finnish Government 2020f). This ban had previously been published as if it were a binding regulation and was treated as such by care unit managers, but it was later characterised as being ‘not based in law’ by legislative scholars, *e.g.* the Deputy Parliamentary Ombudsman (Yle Uutiset 2020). Similarly, the self-quarantine recommendation for persons over 70 had been perceived as more or less obligatory, although it was named a ‘guideline’ that was to be followed ‘to the extent possible’ – but the word ‘must’ was also used in the original expression by the Finnish Government (2020o). This guideline was discontinued and replaced with individual discretion on 23 June (Finnish Government 2020x). As of 1 August, extensive remote work was no longer recommended (Finnish Government 2020cc); however, already on 13 August, the Government suggested shifting to remote work regionally, or even on a national level, if the local epidemiological situation so required (Finnish Government 2020u).

6.2.3 Medicine and medical device policy

The aforementioned amendments to pharmaceutical legislation **(Table 4)** (Ministry of Social Affairs and Health 2020a) were used for the first time on 18 August, when MSAH decided to secure the availability of paracetamol and dexamethasone – both medicines that are frequently used in the treatment of COVID-19 – by restricting the over-the-counter sales of paracetamol to one largest approved self-treatment package at a time and the dispensing of prescribed paracetamol or dexamethasone to a three-month quantity at a time (Ministry of Social Affairs and Health 2020n). Similar restrictions on dispensed quantities were previously in force for all medicines under the Emergency Powers Act, but their validity expired when the state of emergency was lifted. This decision is to remain in force until 15 January 2021. As regards to wearing face masks, THL issued a guideline on 13 August recommending their use in certain situations where safety distances cannot be maintained such as public transport, returning from risk areas abroad, or when travelling to take a COVID-19 test, while stressing that safety distances, hand hygiene and respiratory etiquette were the primary measures to prevent the spread of COVID-19 (Finnish Institute for Health and Welfare 2020u).

6.2.4 Travel restrictions

Domestic tourism was re-opened as of 29 May (Finnish Government 2020m), under certain safety guidelines (Ministry of Economic Affairs and Employment 2020b). As of 15 June, border control was removed from the land border to Norway; air and ferry traffic to Norway, Denmark, Iceland, Estonia, Latvia and Lithuania; and leisure boating (Finnish Government 2020ee). As of 13 July, Finland started lifting entry restrictions from countries not exceeding an incidence of 8–10 cases per 100,000 in 14 days; 17 EU countries and 11 non-EU countries on the EU Council's *'Green List'* (Council of the European Union 2020) met the requirement (Finnish Government 2020x). The incidence criterion was monitored every two weeks and travelling rules were adjusted accordingly, reinstating restrictions for 18 countries between 27 July and 24 August (Finnish Government 2020h, 2020t, 2020v). On 26 August, THL published a traffic light model to ease the risk assessment for travel, where countries were divided in three categories: (1) *green countries* fulfilling the incidence criterion; (2) *orange countries* with an incidence of 10–25 cases per 100,000 during 14 days; and (3) *red countries* where incidence exceeded 25 cases per 100,000 in 14 days (Finnish Institute for Health and Welfare 2020v). Unnecessary travel to orange and red countries was discouraged, and a voluntary quarantine was recommended to travellers returning from those countries.

7 AUTUMN 2020: PREPARING FOR THE SECOND WAVE

7.1 Updating the hybrid strategy

In September 2020, the Government presented a new action plan for implementing the hybrid strategy **(Table 5)** (Finnish Government 2020n). According to the plan, countermeasures are regionally adjusted based on their anticipated epidemiological, societal and basic-rights consequences and the current local pandemic stage: (1) the *base level,* with low incidence, can be managed by hygiene practices and TTI; (2) the *acceleration stage*, with an incidence over 10–25 cases per 100,000 population over a 14-day period and mostly traceable transmission chains, can be contained *via* adjusting local or regional measures; and (3) the *spreading stage* (also called *community transmission phase*), where incidence exceeds 18 cases per 100,000 in 14 days and is growing rapidly, most of the transmission chains untraceable and thus requiring more extensive measures (Ministry of Social Affairs and Health 2020q).

Table 5. COVID-19 pandemic levels according to Finland's action plan for hybrid strategy as of 3 September 2020 (Ministry of Social Affairs and Health 2020q).

Level	Definition	Action
Base level	Low incidence Very few cases of domestic origin	Hygiene recommendations (hand washing, safety distances, masks) Test, trace, isolate, treat Ensure health care preparedness
Acceleration stage	> 6–15 new cases per 100,000 during a 7-day period > 10–25 new cases per 100,000 during a 14-day period > 1% of tests are positive Mostly traceable transmission chains	Adjusted local or regional measures (*e.g.* remote work recommendation) New individual-level measures (*e.g.* extended mask recommendation) Communication to the public Increase capacity for testing and contact tracing
Spreading (community transmission) stage	>12–25 new cases per 100,000 during a 7-day period > 18–50 new cases per 100,000 during a 14-day period Growing at a > 10% daily rate > 2% of tests are positive Less than half of transmission chains traceable Strongly increased need of hospital and intensive care	Stricter and more comprehensive regional measures Extend face mask recommendation **If the situation deteriorates further:** National measures Increase health care capacity **As a last resort:** Reinstate state of emergency

To strengthen the TTI approach, MSAH updated the testing strategy on 19 August, with the aim to increase the testing capacity from 14,000 to 20,000 tests per day and to speed up the testing process so that people could receive results in 24 hours (Ministry of Social Affairs and Health 2020b). The epidemic situation in Finland remained stable through August **(Figure 3)** but the incidence started to rapidly grow in September, exceeding the threshold value of 10 cases per 100,000 in 14 days for acceleration stage in late September (Ministry of Social Affairs and Health & Finnish Institute for Health and Welfare 2020a, 2020c). Most of the cases were occurring in the Hospital District of Helsinki and Uusimaa (HUS), which declared having entered the acceleration phase on 24 September; approximately half of the transmission chains were traceable nationally, while 2/3 were untraceable in HUS area and only 1/5 for the rest of the country (Ministry of Social Affairs and Health & Finnish Institute for Health and Welfare 2020b). The testing capacity exceeded the target of 20,000 tests per day in late September (Ministry of Social Affairs and Health & Finnish Institute for Health and Welfare 2020b). On 21 October, six hospital districts were in the acceleration stage and one – Vaasa hospital district – had entered the spreading stage **(Figure 5)** (Finnish Institute for Health and Welfare 2020e, 2020r).

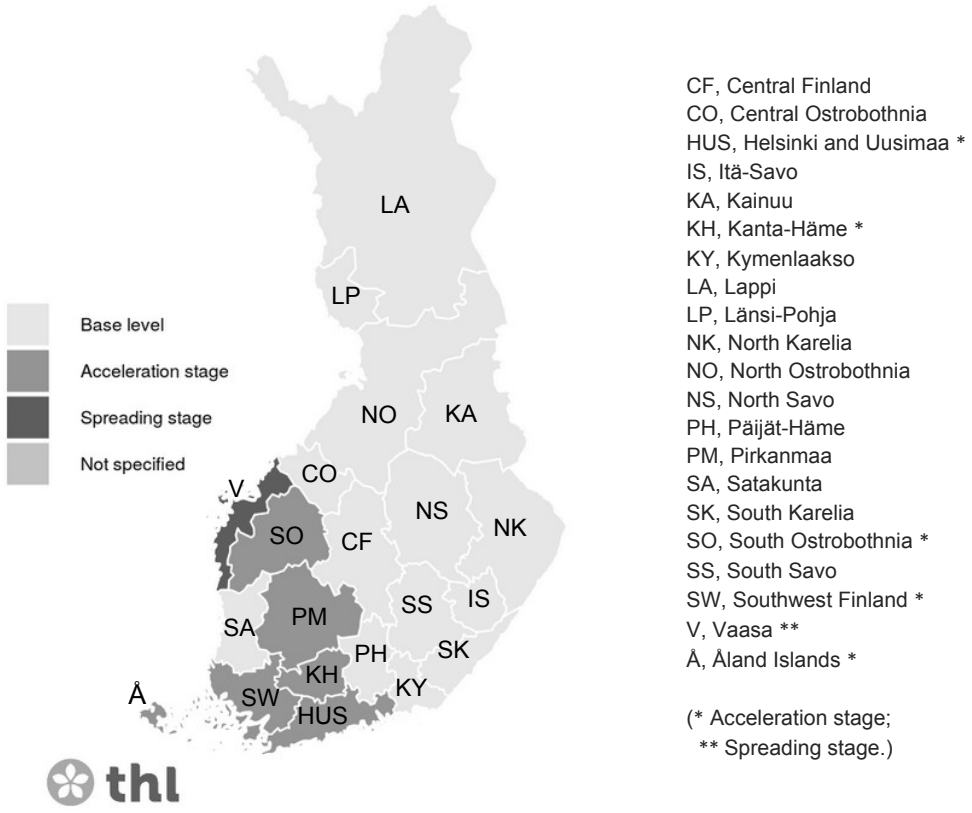

Figure 5. Weekly COVID-19 situation assessment of the hospital districts in Finland as of 21 October 2020. (Modified from: Finnish Institute for Health and Welfare 2020r.)

7.2 Changes in restrictions and recommendations as of September 2020

7.2.1 Quarantines and voluntary recommendations

The Government's hygiene and safety recommendations applicable for the whole population remained similar during autumn, with minor updates **(Figure A3, Appendix 3)**. Importantly, the voluntary and obligatory quarantine times of traced contacts were changed from 14 days to 10 days as of 12 October 2020, as evidence had shown that the onset of the disease nearly always occurs within 10 days of the exposure (Finnish Institute for Health and Welfare 2020a). At the same time, the isolation times of individuals with a mild case of COVID-19 were changed from 14 days to seven days, provided that the patient had been symptom-free for two days. Many voluntary recommendations were adjusted on the basis of regional situation. For example, THL's current guideline on mask wearing (Finnish Institute for Health and Welfare 2020p) advises people to use masks

(1) for base-level regions, in public transport or when travelling to a COVID-19 test or after returning to Finland from a high-risk area;
(2) for regions with an accelerating epidemic, also in secondary and higher education institutions and in congested public spaces such as shopping centres, libraries, sports venues and churches; and
(3) for regions in the spreading stage, always in public transport and always in public spaces, including schools from 7 years of age upwards.

Similarly, the Government's recommendation for remote work, which was reinstated in mid-August, entails the instruction to work remotely as much as possible in areas where the epidemic is accelerating (Finnish Government 2020u). As of mid-October 2020, this recommendation was extended to the national level upon the emerging second wave (Finnish Government 2020e).

7.2.2 Schools, restaurants and public events

Schools started their autumn semester on normal schedule, most of them between mid-August to early September 2020. Most schools resumed contact teaching, with the help of a guideline issued by the Ministry of Education and Culture and THL. Main points of the guideline for day care, primary schools and lower secondary schools (Ministry of Education and Culture & Finnish Institute for Health and Welfare 2020c) state that:

(1) no one should come to school or day care if experiencing flu symptoms;
(2) for risk groups, the risk assessment for participation in contact teaching is carried out by the treating physician for pupils and by occupational health care for employees;
(3) unnecessary physical contacts can be avoided by *e.g.* avoiding meetings, not mixing groups or staff in day care or primary school, using staggered lunch-breaks, and restricting outsiders' access to school premises;
(4) good hand hygiene and respiratory etiquette should be followed;
(5) cleaning should be done according to guidelines published by the Finnish Institute of Occupational Health (FIOH) (2020); and
(6) handling of possible infections at the school should be done by tracing and quarantining all contacts.

The corresponding guideline for higher, upper secondary, vocational, and civic education (Ministry of Education and Culture & Finnish Institute for Health and Welfare 2020d) gives similar advice, with the exceptions that (a) participating in contact teaching is discouraged for students belonging to risk groups and (b) big meetings such as auditorium lectures should be organised *via* remote connection. Higher education institutions have organised contact teaching as far as it is possible, especially for new students and on practical courses that cannot be arranged otherwise, while many theoretical subjects are being taught as online courses. In early September, several possible exposures had taken place at schools, leading to over 1,700 quarantines, but very few further infections resulted from those exposures (Finnish Institute for Health and Welfare 2020m). In their recommendations issued on 23 October, the Government suggested that higher education institutions switch to distance learning if their area is in the acceleration stage and, if the region reaches the spreading stage, for upper secondary and vocational schools to do this as well (Finnish Government 2020d). In addition, people were discouraged from arranging private events of over 20 attendees in the accelerating stage and over 10 attendees in the spreading stage (Finnish Government 2020e).

As of 1 September, restaurants continued with normal customer limits and opening hours, adhering to the safety and hygiene guidelines established during the summer (Ministry of Social Affairs and Health 2020m). A new Decree (648/2020) was issued to extend the same amendments to the Communicable Diseases Act that were already in force from 13 July until 31 August; the new regulation was in force until 30 September **(Table 4)**. However, with the re-surging numbers of cases in late September, the Government decided to limit the opening

hours (4am to 1am) and alcohol-serving hours (9am to 24am) of restaurants again as of 8 October (Finnish Government 2020k). Additional restrictions were applied regionally as of 11 October, ordering restaurants in six hospital districts in the accelerating stage to stop serving alcohol at 22pm, close at 23pm, and limit their customers to half of the normal maximum (Finnish Government 2020k).

Public events, likewise, were restricted again – but already as of 1 September when MSAH issued a guidance letter to the RSAAs, urging them to limit public meetings and gatherings to 50 attendees (Ministry of Social Affairs and Health 2020j). Interestingly, the reason for this strict limit later turned out to be a typo in the MSAH letter, and the original intention had been to keep the limit at 500 (Ministry of Social Affairs and Health 2020k). Regardless of the correction, the RSAAs still decided to maintain the 50-person limit in force, as they had already issued decisions about it (Regional State Administrative Agencies 2020). Nevertheless, events were still allowed to have more than 50 attendees if they adhered to the hygiene and safety guidelines for public events published by the Ministry of Education and Culture and THL (Ministry of Education and Culture & Finnish Institute for Health and Welfare 2020a). As of 23 October, the aforementioned recommendation remained in force for indoor public events, sports and leisure activities in base-level regions, while additional recommendations (Finnish Government 2020d, Ministry of Education and Culture & Finnish Institute for Health and Welfare 2020b) included

(1) for regions in the accelerating stage, public events of all sizes should adhere to the hygiene and safety guidelines, the number of attendees in indoor activities may be reduced to half, and group leisure activities for adults that carry a high transmission risk may be suspended; and
(2) for regions in the spreading stage, all group leisure activities for adults should be suspended.

7.2.3 Mobile application for contact tracing (Koronavilkku)

On 31 August 2020, THL published a mobile contact tracing application called Koronavilkku (Finnish Institute for Health and Welfare 2020j). The application was designed by the software company Solita in cooperation with MSAH, THL, the Social Insurance Institution of Finland (Kela) and Sotedigi Oy, and it works by anonymously tracking people's movements, alerting if the user has been in close proximity with someone who self-reported having been tested positive for COVID-19. Koronavilkku is available for all mobile phones except phones

with operating systems older than iOS 13.5 or Android 6.0 (Finnish Institute for Health and Welfare 2020k). A temporary amendment by Decree (582/2020), in force until 31 March 2021, was made in the Communicable Diseases Act to lay down the rules governing the use of the application, especially regarding data safety issues **(Table 3)**. The Government urged as many people as possible to download and use the application, although its use is voluntary (Ministry of Social Affairs and Health 2020d). Only one day after publishing the application, it had been downloaded a million times (Finnish Institute for Health and Welfare 2020k). The English version of Koronavilkku was published on 9 October (Finnish Institute for Health and Welfare 2020s).

7.2.4 Travel restrictions: transition towards a testing-based model

On 11 September 2020, the Government decided on a gradual shift to a testing-based approach in border traffic in accordance with the hybrid strategy (Finnish Government 2020c). In the first phase, the Government decided to continue internal border checks from 19 September to 18 October, even though this would exceed the maximum period of six months for internal border control dictated by the Schengen Borders Code (Finnish Government 2020dd). As of 19 September, the incidence threshold was raised to 25 cases per 100,000 inhabitants in 14 days, lifting restrictions from EU and Schengen countries as well as non-EU countries on the Green List below that threshold (Finnish Government 2020dd). Accordingly, THL updated the traffic light model (Finnish Institute for Health and Welfare 2020t) to include

(1) *green countries* below the incidence limit, where recreational travel is allowed without quarantines;
(2) *red countries* exceeding the incidence limit, subject to restrictions for entry; and
(3) *grey countries*, subject to external border restrictions, from which all non-essential travel is prohibited for non-residents of Finland.

Travellers entering Finland from red and grey countries for approved reasons (Finnish residents, work-related, or essential travel) are required to undergo possible health checks upon arrival and a 14-day quarantine after arrival, although these interventions are voluntary (Finnish Government 2020dd, Finnish Institute for Health and Welfare 2020t).

During the next phase towards the test-based model, transition period as of 1 October, the same rules still apply (Finnish Government 2020c, 2020dd). Additionally, testing for COVID-

19 prior to arrival is recommended for non-residents coming from red and grey countries, followed by a second test 72 hours post-arrival at the earliest, which will then end the quarantine period if negative. Anyone who spends less than 72 hours in Finland does not need a quarantine nor a second test. Testing is not required of Finnish residents, but they can shorten the quarantine period by taking a test upon arrival and another one after 72 hours. Work and other daily travel between the northern border communities is facilitated by waiving testing and quarantines for this area; the same applies for work-related travel from Sweden and Estonia. Special groups of importance for culture, sports or business life can also be granted entry from all countries, provided that their inviting party presents an application and a health safety action plan to the Border Guard (Finnish Government 2020c).

Upon starting the actual new testing-based model, the plan is to abolish all internal border controls, make prior testing for non-residents an obligatory prerequisite for entry, and impose a duty to check test certificates on transport businesses (Finnish Government 2020c, 2020dd). Amendments to existing legislation and an increase in testing capacity would be necessary to enable these changes (Finnish Government 2020c). The testing-based model was planned to commence on 23 November but, facing legal impediments against such mandatory action, its introduction was delayed.

8 LATE 2020 TO EARLY 2021: TRANSITION TO THE ERA OF VACCINATIONS

Late 2020 and early 2021 marked the emergence of mutated SARS-CoV-2 strains and the onset of COVID-19 vaccinations. Finland received its first batch of vaccine and began immunising health care professionals and risk groups in late December 2020 (Ministry of Social Affairs and Health 2021b). By late February 2021, over 300,000 doses had been administered. However, incidence was accelerating rapidly all across Finland **(Figure 2)**, especially in the Helsinki and Uusimaa (HUS) hospital district where there were increasing numbers of cases caused by the UK variant strain, some backlog in contact tracing, and growth in demand of intensive care due to COVID-19 (Ministry of Social Affairs and Health & Finnish Institute for Health and Welfare 2021). Therefore, the authorities decided to tighten border restrictions to all countries (Ministry of the Interior 2021), re-extend quarantines to 14 days (Finnish Institute for Health and Welfare 2021b), and introduce new regional restrictions in the HUS district (Helsinki and Uusimaa hospital district 2021). The hybrid strategy action plan was also amended with three tiers of prevention measures, ranging from the current approach to the activation of emergency conditions **(Table 6)** (Finnish Government 2021e).

Table 4. Three tiers of prevention measures added to Finland's action plan for implementing the COVID-19 hybrid strategy as of 26 January 2021 (Finnish Government 2021e).

Tier	Conditions for introduction	Approval	Measures
1	The pandemic situation as in January 2021		Adjusted according to each region's pandemic situation
2	Rapid acceleration of the pandemic or extensive spread of SARS-CoV-2 variants	Requires separate approval from the Government	Use of maximal community transmission measures, either nationally or in specified regions
3	If tier 1 and tier 2 measures have been insufficient and there is an immediate threat of health care overload	Requires the joint approval of the Government, the President, and the Parliament*	Emergency conditions and (if necessary) movement restrictions

*There are varying legal opinions as to whether the activation of emergency conditions requires the approval of the President if the objective is to restrict the rights of individuals under section 23 of the Constitution (and not under the Emergency Powers Act).

On 25 February, the Government decided to introduce tier 2 measures with immediate effect, *e.g.* limiting gatherings to six persons, closing public spaces, and commencing remote teaching at universities, in all hospital districts except the five that remained at base level of the pandemic (Finnish Government 2021b). On 1 March, the Government declared a state of emergency to impose a three-week partial lockdown, under section 23 of the Constitution, on restaurants and secondary schools in the aforementioned regions as of 9 March (Finnish Government 2021a). After the three-week period, the restaurant closures were extended to continue until 18 April and to include two more hospital districts as of 29 March (Ministry of Economic Affairs and Employment 2021). The testing-based border traffic model took a step forward in mid-March, when a re-evaluation of the Communicable Diseases Act by the Constitutional Law Committee enabled obligatory mass testing decisions, and RSAAs started to impose mandatory COVID-19 testing collectively for all persons arriving from high-risk countries (Regional State Administrative Agencies 2021). Communicable Diseases Act was also amended to clarify the legislation on compulsory health examinations as of 29 March (Ministry for Social Affairs and Health 2021a). In addition, the Government submitted a proposal on 25 March for imposing mandatory mask wearing, curfews, and movement restrictions in the most affected regions (Finnish Government 2021c). The proposal was, however, withdrawn on 31 March after receiving a critical review from the Constitutional Law Committee, stating that the planned approach for curfews (to 'forbid any movement that is not implicitly allowed') was against the principle of proportionality (Finnish Government 2021d). Another suggested measure under contemplation would be the regional targeting of vaccinations based on pandemic situation, as opposed to the current risk group-centred strategy (Finnish Institute for Health and Welfare 2021c).

9 DISCUSSION

It is well known that decisive leadership, evidence-based public policies and strengthening the health system are vital in the COVID-19 response. Finland reacted early to the incoming pandemic, which has been considered one of key factors that can effectively reduce the spread of COVID-19 and associated mortality (Oksanen et al. 2020, Tiirinki et al. 2020). Outcomes have clearly been favourable: as of 28 March 2021, Finland was the least affected country in Europe by confirmed COVID-19 cases per 100,000 inhabitants, and the third least affected in terms of COVID-19 deaths per 100,000 inhabitants (World Health Organization 2021). Furthermore, the need for care did not exceed the capacity of intensive care at any point during the first pandemic wave, nor was there any increase in Finland's total mortality (Finnish Institute for Health and Welfare 2020b, 2020n).

In this study, I described the policy actions taken by Finnish authorities in response to the COVID-19 pandemic. The study reveals several interesting points. On 16 March 2020, the Finnish Government activated the Emergency Powers Act and six main powers therein, most of them concerning health system preparedness. As regards to policies affecting the general public, the Government introduced eight obligatory decisions and seven voluntary recommendations during the first wave of the pandemic. These did not include quarantine and isolation regulations automatically in force for a *generally hazardous communicable disease* under the Communicable Diseases Act. During the course of summer 2020, the state of emergency was lifted and the focus started shifting towards safety guidelines for institutions and regionally tailored restrictions based on amended ordinary legislation. The main hygiene instructions for the public remained constant, with some updates such as alleviating the strictest recommendations for social distancing and adding mask usage and mobile application to the *repertoire*. After a second wave and commencement of vaccinations in late 2020, the beginning of 2021 marked the planning of new restrictions – including a lockdown of sorts – upon an alarming increase in incidence across Finland.

Policy making response to COVID-19 in Finland has been dynamic and sensitive at the national, regional and local levels in terms of epidemiological and economical situations. The initial response was swift and firm, with an emphasis on open communication to the public *via* regular television broadcasts, enhancing public trust. Despite extensive lockdown measures such as school closures and temporary restrictions to domestic travel between provinces, essential functions of society were maintained by continuing day care for children,

public transport, essential businesses, and supply of daily consumer goods. It is also noteworthy that, although the premises of schools were closed (with certain exemptions), teaching never ceased but continued as remote teaching with the tireless effort of teachers, parents and pupils. After some initial confusion, schools resumed offering lunch for the pupils in varying forms such as take-away lunch or do-it-yourself food packages. This was done to avoid increasing difficulties of vulnerable groups to offer healthy food for their children. In some instances, the practical implementation did not go quite smoothly, such as a large batch of PPE ordered from China failing to fulfil the specifications or MSAH going back and forth with public event restrictions due to a typing error. These challenges aside, the Government strived to introduce functional, transparent policies with the aims of containing viral spread, preventing the exhaustion of health care resources, and protecting the risk groups (Ministry of Social Affairs and Health 2020q).

However, Finland may be facing an increase in future morbidity due to possible *sequelae* of COVID-19 and, more importantly, the aftermath of downscaling non-urgent care in the form of exacerbated non-communicable diseases, dental problems, and mental health issues. The latter forecast is shared by Tiirinki et al. (2020), who concluded that Finland's response to the first wave might have been, though successful in slowing the spread of disease, excessive in some aspects. Indeed, the extent to which the advantages of lockdown policies outweigh their detrimental effects has been causing some controversy, shown by the endorsement of opposing declarations by thousands of scientists and health professionals. The Great Barrington Declaration, published on 4 October 2020, called for a *'Focused Protection'* approach that would liberate the young low-risk people to live normally (Kulldorff et al. 2020). The *John Snow Memorandum* published in the Lancet on 15 October 2020, in contrast, stated that there is no evidence base to back up the *Focused Protection* strategy, nor is it feasible to isolate everyone at higher risk (Alwan et al. 2020). The established consensus and highest public health authorities clearly favour the latter, and so does *Science Forum Covid-19* – a group of Swedish scientists that have called for a more restrictive COVID-19 policy in Sweden (Science Forum Covid-19 2020), which seems reasonable in light of Sweden's higher excess mortality compared to other Nordic countries (Ludvigsson 2020, Vogel 2020). Indeed, in the face of the third wave in early 2021, Sweden introduced a new temporary COVID-19 Act to impose restrictions such as limited restaurant opening hours, recommendations for remote work and mask-wearing in public transport, closures of non-essential services, and a test requirement for incoming travellers (Ministry of Health and Social Affairs 2021a, 2021b).

Human rights have been at the heart of public health policies in response to COVID-19 in Finland. In all countermeasures, the Finnish Government tried to avoid violating people's autonomy or human rights unless absolutely necessary. For example, quarantines for returning travellers were voluntary, and even quarantines legally imposed on persons exposed to COVID-19 were only monitored by phone calls from health professionals. Mandatory restrictions to people's movement were only imposed for limited periods of time upon the closure of the capital region from the rest of the country for two and a half weeks, and Finnish residents could not be denied entry to or exit from Finland according to the Constitution. This seems very lenient compared to the Spanish curfew that was heavily fined if broken (Henríquez et al. 2020) or the mandatory quarantines at hospitals and isolation camps in Mongolia (Erkhembayar et al. 2020). As regards to the technology innovations used for symptom assessment and contact tracing, people's privacy was always respected; for example, THL assured that the mobile application Koronavilkku is anonymous and data-secure (Finnish Institute for Health and Welfare 2020j). The opposite was done in South Korea, where people's privacy was waived as their movements were tracked with mobile device GPS, credit card usage, and even CCTV, and the government was obligated by law to share tracking information with the public (Lee & Choi 2020). Even though Finland has been moving to a more restrictive direction, authorities are still trying to avoid full closures of schools and leisure activities that can negatively impact children and adolescents. On the other hand, further restrictions may still be necessary to buy time for the vaccinations to confer a sufficient level of immunity to protect the population on a large scale, which may take a significant amount of time – especially in light of the increasing incidence of new viral strains and uncertainties regarding the efficacy of vaccinations against them.

Public compliance to the interventions has been good. Finns are notoriously law-abiding, which may even prove counterproductive at times. For example, certain instructions issued by the Government during the first pandemic wave were perceived as obligatory decisions and followed blindly without considering individuals' needs and limitations. Such examples include the recommendation for people over 70 years of age to remain secluded from social contacts and the guidance by MSAH for care homes and hospitals to restrict visits. The latter, in particular, was published as an order, and instructions to exert case-by-case discretion were only given much later after the policy had already received widespread criticism, as the Communicable Diseases Act does not grant powers to impose such general-level isolation policies. A marked decline in the quality of life was caused to older people who spent months

without seeing their loved ones – not to mention disabled people living in 24-hour care units, many of whom are not even at risk of severe COVID-19. This kind of rigid restriction without case-by-case balancing of pros and cons, especially when not backed up by law, is clearly a violation of human rights. However, protecting the vulnerable is an essential goal, which must now be implemented *via* 'softer' means. To this end, THL published safety guidelines for care home visits in mid-September 2020, which can be summarised as follows: (1) pre-arranged visits of 1–3 healthy visitors are allowed; (2) the visitors wear surgical masks and adhere to good hand hygiene; (3) communal premises are to be avoided; and (4) safety distances of 1 to 2 metres are to be kept to the staff and other residents (Finnish Institute for Health and Welfare 2020w).

Despite the aforementioned clashes between authorities and the public, there is a good level of public trust on authorities in Finland which, according to Oksanen et al. (2020), may reduce COVID-19 mortality by improving compliance to restrictions. Conversely, countries with more sociable culture have been found to suffer from higher mortality due to COVID-19 (Oksanen et al. 2020). Indeed, the less friendly socio-cultural tradition in Finland greatly facilitates the adoption of safety distances – after all, Finns prefer a larger interpersonal distance and tend to engage less in touching, *e.g.* hugging, even compared to other Nordic citizens such as Swedes. In addition, population density is low almost everywhere in Finland except in the Helsinki metropolitan area, where the highest incidences of COVID-19 have consistently been found, suggesting that geographical distance does indeed bear importance. Furthermore, Finnish people's high educational attainment level contributes to a high level of IT literacy and ease of using technologies for remote working and e-conferencing, not to mention the fact that nearly all areas have good Wi-Fi coverage. The social protection offered by welfare states can also enhance public compliance to restrictions: a quarantined person is entitled to *sickness allowance on account of an infectious disease* to remunerate for their lost salary in full for the duration of the quarantine. It may even be that the national trauma by the Second World War has made the Finns grow more resilient against hard times, and compliant to follow tedious orders, compared to *e.g.* Swedes who like to engage in fun activities, travel more often than Finns, and have never faced war-like catastrophes in their lifetime.

Ever since the start of the pandemic in March 2020, the Government issued several policies to mitigate harmful economical, educational and work-life effects caused by the pandemic and – in particular – by the emergency response. For example, financial measures were taken to

help struggling businesses and laid-off workers (Finnish Government 2020s, Ministry of Economic Affairs and Employment 2020a). Perhaps as a result of these policies, the economic impact remained at a moderate level compared to many other high-income countries – at least until the second quarter of 2020 (Hasell 2020). Interestingly, there did not seem to be a clear trade-off between health and economy, as the decline in economy showed no inverse correlation with COVID-19-related deaths (Hasell 2020). On the other hand, it is not known to what extent death rates and economic decline have been affected by state policies. In fact, Chen et al. (2020) have argued that economic losses early in the pandemic were due to reduced mobility of people rather than NPIs *per se*, and therefore rapid lifting of restrictions might not immediately boost the economy unless the public also feel safe to resume normal activities. As important as the economical aspect is, it is beyond the scope of this study. Economic measures and the impact of COVID-19 on Finland's economy have been discussed more thoroughly by Tiirinki et al. (2020). Other limitations of this study include the fact that it did not measure the impact of public health policies on mortality or morbidity. Other factors that would have been worth measuring – but could not be fitted in the scope of the study – included *e.g.* the level and patterns of criticism, distrust and non-compliance, or the impact of the policies on mental health. However, this study has reported the legal basis and timeline of Finland's policies and discussed certain issues such as human-rights aspects from a social science perspective, providing an important baseline summary for further studies that can be used as a platform for planning response programmes to future pandemics.

10 CONCLUSIONS

Finland's strategy has transitioned from national lockdown to a TTI-based, targeted approach where restrictions may be reinstated regionally, depending on the epidemiological situation. A needs-based strategy such as this may enable the effective containment of the pandemic in a sustainable manner until a sufficient level of immunity is reached *via* vaccinations. Sufficient testing capacity, robust health care resources, and good public compliance are important prerequisites for this approach to work. Finland seems to fulfil these requirements. However, it is not yet possible to predict all scenarios, as the impact of public health measures is not fully known, and the global situation also affects Finland *via* travellers regardless of attempts to close borders. In addition, the growing number of new mutated strains of SARS-CoV-2 brings further uncertainties about infectivity, severity of disease, and efficacy of vaccinations.

11 REFERENCES

Key to references: as there are many references from the same author–year, the references are organised by year (*e.g.* Finnish Government 2020a–z, then start with Finnish Government 2021). References from the same author–year are in alphabetical order by the reference title from a to z; if there are more references than the alphabets, references after 2020z start with 2020aa, 2020bb, etc.

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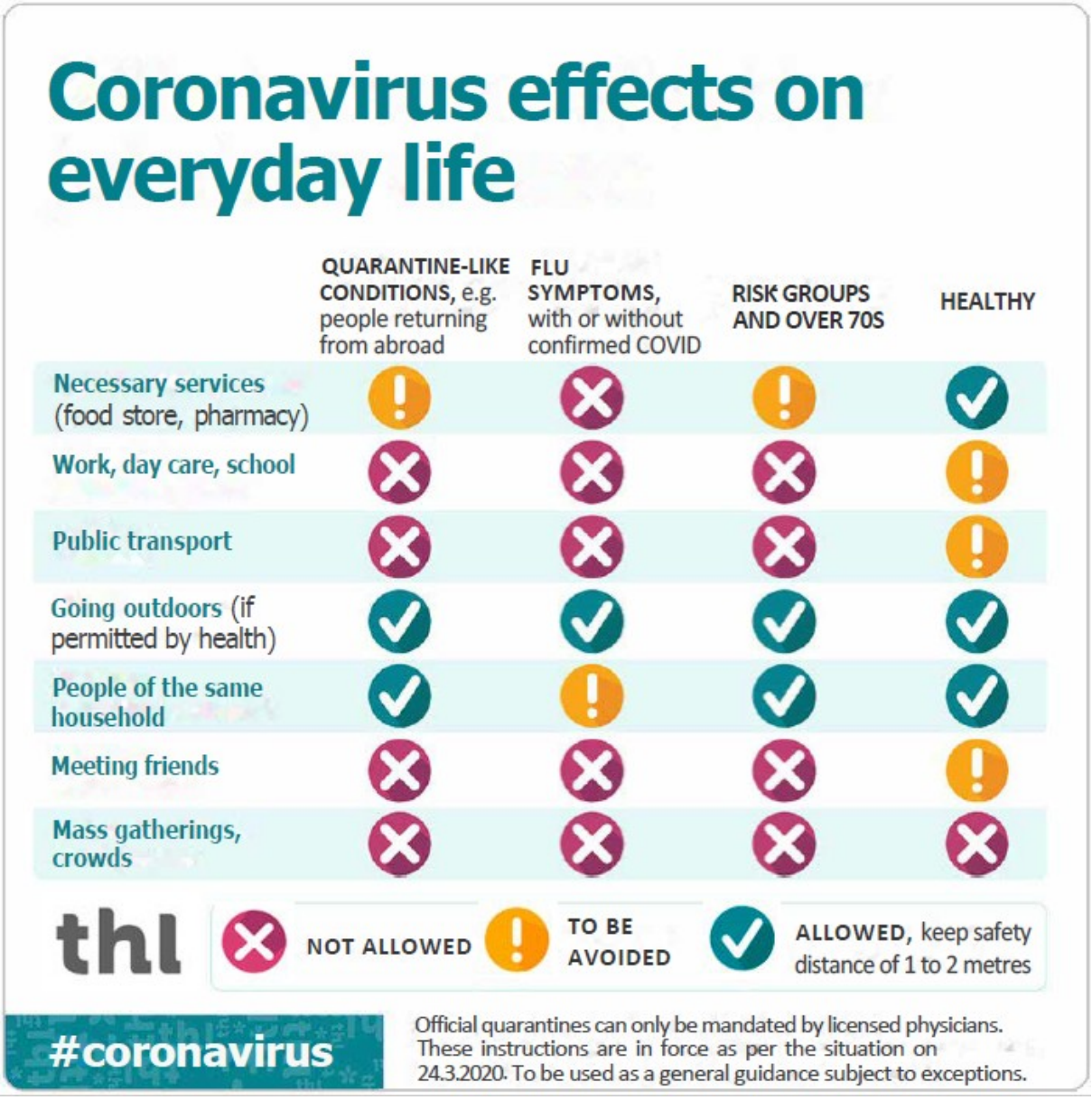

Figure A1. Social distancing instructions for the general public, published by the Finnish Institute for Health and Welfare (THL) in March 2020. (Modified from: Finnish Institute for Health and Welfare 2020L. Original figure in Finnish; translation by U. Tengvall-Unadike.)

Figure A2. Hygiene and other COVID-19-related instructions for the general public, published by the Finnish Institute for Health and Welfare (THL) in May 2020 (Finnish Institute for Health and Welfare 2020L).

Figure A3. COVID-19-related instructions for the general public, published by the Finnish Government during autumn 2020 (Finnish Government 2020y, 2020bb).