



UNIVERSITY OF BERGEN
Department of Administration and Organization Theory

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Master Thesis in Administration and Organization Theory

Preparing for the Unknown Crisis

**A Case Study on Norway's Pandemic Preparedness Before the
SARS-CoV-2 Pandemic Outbreak**

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”Crisis tend to cast long shadows upon the political systems in which they occur. It is only when we study these longer-term processes that we are able to assess their full impact” (Boin, 't Hart, Stern, & Sundelius, 2017, p. 142)

SUMMARY

The aim of this master thesis is to answer the following research question, ‘*how have previous large-scale pandemic or epidemic outbreaks contributed to shaping the current crisis management and pandemic preparedness plans in Norway?*’ In order to answer this question, a qualitative approach have been utilised in order to carry out a result-explanatory process-tracing case study. Both political sources – such as white papers, NOUs, and government reports – and other publicly available sources – such as websites, historical and academic research and publications, news articles, or articles published by independent organisations and actors – are used in this thesis. The theoretical framework is built on path dependency, crisis typologies, and crisis management perspectives, which informs how the preparedness plans were created, and the events that partook in shaping the content of the plans. The timeframe for this thesis is mainly between 2000 and 2019, but documents prior to this have also been included in order to demonstrate the path dependence. Three preparedness plans and two strategies are analysed in the empiric chapter, in order to analyse the overall pandemic preparedness. These documents were selected based on their importance in the framework of crisis management in the health and care sector of Norway.

The Norwegian crisis management is based on four contextual principles – the principle of liability, the principle of proximity, the principle of conformity, and the principle of collaboration – that are being utilised in all areas and sectors in the Norwegian preparedness. The first three principles are based on the findings from the 1999 “Willoch Committee”, and the last principle came after the 2011 terrorist attack in Norway. However, some of these principles have been present in the Norwegian management strategies since the introduction of the Public Health Act of 1860, and have been a central part of the Norwegian ideal of egalitarianism, local government, and focus on de-centralisation.

The main findings of this thesis indicate that, previous pandemic events such as the 1918/19 H1N1 pandemic, the 2009 H1N1 pandemic and the Ebola patient in 2014 have influenced the pandemic preparedness management strategies. Additionally, it finds that it is not only previous pandemic events that have shaped the pandemic preparedness in Norway, but also other crises, disasters, and complex emergencies, such as the 2004 Sumatra–Andaman earthquake and the 2011 terrorist attack on Norway have created critical junctures and changed the way in which good preparedness is understood.

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The Sars-CoV-2 pandemic have ravaged throughout the world for more than a year now, including the entire duration of writing this thesis. Now, as the process has come to an end, so does it seem like the pandemic has as well.

This thesis marks the end of my time as a student, and is the culmination of nearly seven years of learning and inspiration. This last year has been challenging in more than one way: being isolated, unable to partake fully in the academic and social environment at the faculty, and the missed opportunity to have a spontaneous face-to-face conversation over a cup of coffee.

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LIST OF ABBREVIATIONS AND TRANSLATIONS

ABB.	ENGLISH	NORWEGIAN
1918/19 H1N1	Spanish Flu	Spanskesyken
1957 A/H2N2	Asian Flu	Asiasyken
1968 A/H3N2	Hong-Kong Flu	Hong-Kong Influensaen
1977 H1N1	Russian Flu	Russerinfluensaen
2009 H1N1	Swine Flu	Svineinfluensa
AKS	Crisis Scenario Analysis of 2019	Analyser av Krisescenarioer 2019
BBH	The Mandate for the Emergency Preparedness Committee Against Biological Incidents with Counselling and Coordination at a Regional Level	Mandat for Beredskapsutvalget mot Biologiske Hendelser med Rådgivere samt Koordinering på Regionalt Nivå
CBRNE	National Strategy for CBRNE-Preparedness	Nasjonal Strategi For CBRNE-Beredskap 2016-2020
CCD	Act Relating to Control of Communicable Diseases (Act Of 5 August 1994, No. 55)	Lov 5. August 1994 Nr. 55 om Vern mot Smittsomme Sykdommer (Smittevernloven)
DSB	The Norwegian Directorate for Civil Protection	Direktoratet for Samfunnssikkerhet og Beredskap
FFI	Norwegian Defence Research Establishment	Forsvarets Forskningsinstitutt
HCSA	Act Relating to Health and Care Services (Act Of 24 June 2011, No. 30)	Lov 24. Juni 2011 Nr. 30 om Kommunale Helse- og Omsorgstjenester M.M. (Helse- og Omsorgstjenesteloven)
HDIR	The Directorate of Health	Helsedirektoratet
HOD	Ministry of Health and Care Services	Helse- og Omsorgsdepartementet

HSP	Health Preparedness Act (Act Of 23 June 2000, No. 56 Relating to Health and Social Preparedness)	Lov 23. Juni 2000 Nr. 56 om Helsemessig og Sosial Beredskap Lov (Helseberedskapsloven)
JBD	Ministry of Justice And Public Security	Justis- og Beredskapsdepartementet
KPI	Continuity Planning – Pandemic Influenza	Kontinuitetsplanlegging- Pandemisk Influenza
LM	Leadership Ministry	Lederdepartement
MCE	Ministry of Climate And Environment	Klima og Miljødepartementet
MD	Ministry of Defence	Forsvarsdepartementet
MFA	Ministry of Foreign Affairs	Utenriksdepartementet
MHS	Act Relating to the Municipal Health Services (Act of 19 November 1982, No. 66)	Lov 19 November 1982 Nr. 66 om Helsetjenesten i Kommunene (Kommunehelsetjenesteloven)
NHPP	National Health Preparedness Plan	Nasjonal Helseberedskapsplan
NIPH	Norwegian Institute of Public Health	Folkehelseinstituttet
NOU	Official Norwegian Reports	Norsk Offentlig Utredning
ORV	The Overall Risk and Vulnerability Assessments for National Preparedness in the Health and Care Sector	Overordnede Risiko- og Sårbarhetsvurderinger for Nasjonal Beredskap i Helse- og Omsorgssektoren 2019
OSID	National Emergency Preparation Plan Against Outbreaks of Severe Infectious Diseases	Nasjonal Beredskapsplan mot Utbrudd av Alvorlige Smittsomme Sykdommer
PHA	The Public Health Act of 1860	Sunnhetsloven 1860
PPI	National Preparedness Plan for Pandemic Influenza	Nasjonal Plan mot Pandemisk Influenza
SHSA	Specialist Health Services Act (Act Of 2 July 1999, No. 61 Regarding Health and Care Services)	Lov 2. Juli 1999 Nr. 61 om Spesialisthelsetjenesten M.M. (Spesialisthelsetjenesteloven)

Instructions for the Ministries' Work with Civil Protection and Emergency Preparedness (<i>Instruction On Societal Security</i>)	Instruks for Departementenes Arbeid med Samfunnssikkerhet (Samfunnssikkerhetsinstruksen)
Ministry of Transport	Samferdselsdepartementet
National Health Preparedness Exercise	Nasjonal Helseberedskapsøvelse
Norwegian Healthnet - Public Enterprise	Norsk Helsenett
Principle of <i>Liability</i>	Ansvarsprinsippet
Principle of <i>Conformity</i>	Likhetsprinsippet
Principle of <i>Subsidiarity / Proximity</i>	Nærhetsprinsippet
Principle of <i>Collaboration</i>	Samvirkeprinsippet
The Norwegian Coastal Administration	Kystverket
The Office of the Auditor General of Norway	Riksrevisjonen
The Standing Committee on Scrutiny and Constitutional Affairs	Kontroll- og Konstitusjonskomiteen
Vital Functions in Society	Samfunnets Kritiske Samfunnsfunksjoner

1. INTRODUCTION

The topic of this thesis is preparedness and crisis management on the area of pandemic preparedness in Norway. It analyses three preparedness plans and two preparedness strategies¹ in order to create an image of the Norwegian pandemic preparedness prior to the Sars-CoV-2² pandemic, and determine whether it was sufficient to manage future pandemics. By examining crisis management and path dependencies, it is possible to observe the connections between the plans, the reasons for why the plans were established, and the factors that influenced the content. Consequently, the pandemic preparedness can be traced back to previous crisis, and a causal relationship can be established between new and previously implemented measures, which then would have been ‘locked-in’ the path of health and care preparedness.

It is important to notice how previous crisis have shaped the Norwegian preparedness, especially the pandemic preparedness, because it reveals ways in which the governing bodies might be grossly unprepared. If the conclusion is that the pandemic preparedness have been trapped in a self-reinforcing positive feedback loops, and only reproduce measures that have worked in the past, the government of Norway might not be prepared to manage future pandemics containing unknown pathogens.

There is an assumption that it is impossible to prepare fully for a crisis, and that any attempts to do so would be futile when the actual crisis emerge. However, the plan itself might not be useful during a situation of unknowns, but the planning and processes that have led to the plan might have contributed to creating a greater understanding of the overall situation and available measures and strategies. As a result, the planning and preparation process could be viewed as a crucial part of the overall preparedness, as the preparation of the plans might have provided invaluable learning experiences and a possibility to reflect on possible paths ahead.

This thesis is relevant for those who seeks to understand how the Norwegian pandemic preparedness came to be, and for those who wish to conduct further research on pandemics and how such crisis have influenced the Norwegian crisis management. The intention of this thesis is to make a contribution on the field of societal security, preparedness planning, and

¹ I will refer to the three preparedness plans and the two strategies as *preparedness plans* or *the plans* in this thesis.

² I will refer to the SARS-CoV-2 pandemic by the most commonly used names, the *Corona pandemic* or the *Covid-19 pandemic*.

crisis management, by analysing the Norwegian pandemic preparedness before the outbreak of the Covid-19 pandemic.

1.1. PURPOSE OF THIS STUDY

As the end of the Covid-19 pandemic is within reach, new studies and research on the preparedness and crisis management will increasingly become more relevant. In order to conduct such an analysis, understanding how a selection of the most important pandemic preparedness plans in Norway came to be, can be of great help in order to improve the level of future research. It might also contribute to an increased understanding of how the Norwegian preparedness is structured, and in what ways the pandemic preparedness could improve. I hope that this thesis is able to shed light on the strategies that guide the management and preparedness, in addition to the structures that limits or promotes various measures.

The fields of societal security, preparedness, and crisis management are improved and revised on a regular basis, and specific focus is dedicated to the area in the aftermath of a crisis or a complex emergency. These unwanted events partially shape our understanding of crises and complex emergencies, and this understanding influence and generate structures in order to be better prepared should a similar event be encountered in the future. However, in the case of pandemic crises, the expectations of the next pandemic is based on previous experiences with pandemic influenza, which have influenced the Norwegian preparedness strategies on how to manage future outbreaks. As witnessed during the Covid-19 pandemic, specified plans that manage pandemic influenza is not always possible to translate onto different pathogens or communicable infections. Therefore, the preparedness plans would need to be general, so that they can cover as many scenarios as possible, while at the same time not being too general, so that the plan remains operational.

This fine line between the plans being too specified or too general, in addition to the understanding of the term ‘crisis’ and the building blocks of the Norwegian pandemic preparedness, are areas that remains intriguing for further research on the Norwegian preparedness.

1.2 RESEARCH QUESTION

The selected management strategies in a crisis can greatly affect people or societies, and have an impact on the trust of the capabilities of the government or elected officials. If the crisis management is poor or insufficient, it could result in changes to the societal structures, particularly if the crisis is of some magnitude, which would greatly affect the every-day life of people. As witnessed throughout the Corona pandemic, some countries have had better success at managing the pandemic crisis than others. In some European countries, the faulty crisis management strategies have resulted in a lack of trust in the governments' capabilities, large demonstrations against the implementation of preventative measures, and increased right-wing extremism, xenophobia, and racism (The Norwegian Police Security Service, 2021).

This thesis seeks to analyse five pandemic preparedness plans, which have all contributed in shaping the current Norwegian pandemic preparedness. The timeframe in this thesis mainly focus on the period between the year 2000 and 2019, and excludes all changes and newly implemented measures that came as a response to the outbreak of the Covid-19 pandemic in the beginning of 2020. By using process tracing as a methodological choice, it is possible to find some documents that are traced back to the 1990s or earlier, and will therefore have to be included in the analysis if they are relevant for further analysis or explanation. By tracing the path dependencies of the measures in each of these plans, it will become possible to establish how the plan came to be, and what factors influenced them. Some of the events that took place within the selected timeframe was the 2003 Severe Acute Respiratory Syndrome (SARS) (World Health Organization, 2003), and the 2012 Middle East Respiratory Syndrome (MERS) (World Health Organization, n.d.) epidemics, the Ebola virus outbreaks in 2014 and 2018, the emergence of the Zika virus in 2015/16 (Suthar, Allen, Cifuentes, Dye, & Nagata, 2017), the 2009 H1N1 influenza pandemic, and finally, the first recorded outbreak of the Corona virus pandemic at the end of 2019. The evaluation process after the terrorist attack on the 22nd July 2011 in Norway would also uncover major flaws in the Norwegian preparedness planning and crisis management (Meld. St. 21 (2012–2013)), which have affected the entirety of the Norwegian preparedness and crisis management strategies.

Have new strategies on societal security, preparedness, and crisis management come as a response to previous pandemic crises, or have other events equally contributed to shaping the preparedness plans? Have the pandemic preparedness developed as a separate field of preparedness, or is the principles of general preparedness guiding the creation of the

pandemic preparedness plans? In light of these enquiries, the research question is *how have previous large-scale pandemic or epidemic outbreaks contributed to shaping the current crisis management and pandemic preparedness plans in Norway?*

In addition to the research question, three sub-questions have been included in order to further a comparison and analysis of the content in the preparedness plans. These questions will help guide the data collection process, the analysis of the content in the five preparedness plans, and serve as a point for further comparison between the plans.

- 1 *‘What were the main reason for the implementation or revision of the current Norwegian pandemic preparedness plans?’*
- 2 *‘Is it possible to detect a path dependent decision making in the creation of the pandemic preparedness plans?’*
- 3 *‘How do the pandemic preparedness plans allow for autonomy or deviation from the established ‘paths’ of crisis management in order to solve an unforeseen event?’*

2. CONTEXT

Are we the architects behind our own misery? Have we put ourselves in a situation where we have to construct solutions to problems that we have created with our recklessness and thoughtlessness? Perhaps not, but in the case of pandemics, we as humans have contributed to the increased threat of new emerging communicable diseases, which have the ability to spread faster around the world than before. There are measures and strategies in place to combat familiar pathogens – which often occur as seasonal flus – like vaccines, sanitary measures, quarantine and isolation of the sick, and treatments should someone be infected by the pathogen. However, if there were to be an encounter an unfamiliar pathogenic strain, some of the core prevention measures may not be enough to control the spread of the disease. As the nature of the next pandemic remains unknown, the best current strategy is to learn from previous encounters with communicable infections, and to analyse which measures worked, and which did not. These learning experiences would then need to be transferred into preparedness plans, so that the government would be more prepared when faced with the next pandemic. These plans would also need to be highly flexible and encourage improvisation, as no crises are alike.

This chapter focus on the events that have contributed to shaping the current preparedness plans and crisis management in Norway. It examines the ground-breaking Norwegian law introduced in 1860, the ‘The Public Health Act of 1860’ (PHA), and how it have left its mark on today’s crisis management. Additionally, this chapter will include a perspective on how environmental factors and human-activities have influenced the spread, severity, and reach of possible future pandemics. Lastly, this chapter will introduce the current crisis management strategies in Norway.

First, I would like to clarify the difference between a pandemic and epidemic, as this separation would prove to be fruitful for the rest of this essay. Simply put, an epidemic is a communicable disease that affects a disproportionately large number of individuals within a community, region, or area, at the same time. The number of cases in the given areas varies in accordance with the size, biological agent, and the groups of people in the population exposed to the pathogen (Direktorat for Samfunnssikkerhet og Beredskap, 2019, p. 65; ReliefWeb Project, 2008). A pandemic is an epidemic that spreads over several continents, countries or areas, and that affects a larger number of people.

Increased globalisation have led to more intercontinental travel activities, and a growing number of people have gained the means and freedom to travel across the world at their own leisure. Humans are to a larger degree living in bigger and closer groups (i.e. in growing cities), expanding their social networks, which entails that the number of people that each person meet on any given day has grown. Food production has been industrialised and streamlined in order to increase output, whilst at the same time reduced the cost of production. In order to meet the demands of an ever-growing international food market, previously untouched natural areas and its adhering wildlife is reduced and turned into farmlands at an alarming rate. Humans and wildlife are unwillingly living closer to each other in vulnerable parts of the world, and in addition to the growing amount of domesticated animals used for food production, wildlife have to compete for many of the same natural resources. This way of life comes at a cost – one of them is the increased exposure, and risk of contracting and spreading infectious diseases.

2.1 PANDEMICS IN HISTORY

It is not a new phenomenon in history that communicable diseases are transmitted across national borders. Throughout known and prehistoric human history, several cases of disease have effected both humans and animals, and some have even threatened the very existence of societies. Hence, it becomes feasible to suppose that fighting pandemics and the subsequent crisis management, is not a new phenomenon.

Infectious diseases have for millions of years' threatened very existence of humans and societies, and presented new challenges that would have to be overcome in order to survive. As hunters and gatherers – or foragers – the spread of infectious diseases were minimal, as band or tribe societies were relatively small in size, and separated by vast distances that restricted contact with other band societies or tribes (Pauls, 2008; The Encyclopaedia Britannica, 2019). With the introduction of the agricultural revolution, communicable diseases, in turn, had better conditions to spread from one person to another, as humans started living closer to each other and increased their interactions within larger societal groups, in addition to being closer to various kinds of wild and domesticated animals. As a result, new diseases emerged. When people started living closer to one another, and the number of people in societal groups grew, the number of people that encountered 'new' people grew accordingly. Some societies also started having increased contact with other

societal groups through inter and cross-continental trade routes, such as the silk road, or with the European crusaders in the 11th and 12th century (Eyler, 2003).

An expansion of trade, effective colonisation efforts, and increasing globalisation gave communicable diseases an ideal chance to spread more easily and effectively across continents. New trade and travel routes, in addition to new lines of communications between different continents, allowed infectious diseases to spread to areas where it had not previously been recorded. Some communicable diseases have had its origin from the globalisation period between 1870 and 1914 (Piketty, 2014), whereas other diseases would later transform and spread across larger parts of the world, giving them the status of a pandemic. Diseases such as malaria (Cox, 2010), tuberculosis (Daniel, 2006), influenza (Caius & Hecker, 1859), smallpox (Eyler, 2003; Henderson, 2011) different plagues, and leprosy (Lastória & Abreu, 2014) are examples of this. These diseases all spread at a large scale throughout this period, and several of these diseases still devastate societies to this day. Historians disagree about when the first influenza pandemics occurred, though the first certain description of an outbreak originated in 1510 (Mamelund & Iversen, 2000). Some of the most prominent influenza pandemics that have affected Norway in the last 100 years, was the 1918/19 H1N1 (Spanish flu), 1957 A/H2N2 (Asian flu), 1968 A/HN2 (Hong-Kong flu), and the 1977 H1N1 (Russian Flu) pandemics (Mamelund & Iversen, 2000), which is also reflected in the Norwegian preparedness against infectious diseases. The World Health Organisation (WHO) have since 1997 facilitated pandemic preparedness (Baekkeskov, 2016, p. 299; World Health Organization, 1999, 2005), and Member States are free to choose their own management strategies and preparedness to combat communicable diseases.

Encounters with the 1918/19 H1N1 and 2009 H1N1 influenza pandemic, and the 2014-2015 West African Ebola epidemic have contributed to shaping the Norwegian preparedness plans that are used today. The 1918/H1N1 pandemic is used as a worst-case scenario in the pandemic preparedness (Direktorat for Samfunnssikkerhet og Beredskap, 2019, p. 19 ; Helse- og omsorgsdepartementet, 2014a, p. 8; Helsedirektoratet et al., 2015, p. 127), even though the plans view the chance of such a devastating pandemic to occur as slim, due to medical advances in the last decades. Likewise, the more recent 2009 H1N1 pandemic have led to changes in the Norwegian preparedness against communicable diseases, and is regarded as a more plausible future pandemic scenario than the 1918/19 H1N1 pandemic. Even though the Ebola virus did not infect anyone within the geographical Norwegian border, new interim preparedness plans were created, and previous preparedness strategies were

revised in order to manage a potential future outbreak, as one import-case of the disease was reported (Folkehelseinstituttet, 2014; Helse- og omsorgsdepartementet, 2019; Helsedirektoratet, 2015; Helsedirektoratet & Folkehelseinstituttet, 2014).

The H1N1 outbreak of 1918/19 had a lasting impact on the world, as it is estimated that one third to more than half of the world's population was infected, and the mortality rate is estimated at between 20-100 million people globally (Mamelund, 2021; Mamelund & Iversen, 2000), though the exact number is somewhat disputed. It has by some been described as the worst pandemic "in modern times" (Doherty, 2016) due to its ability to spread so extensively during the first World War. It is estimated that around 15.000 people died from the influenza in Norway, and the pandemic came in three to four waves – the majority of fatalities in Norway happened in the third wave (Mamelund, 2021).

The 2009 H1N1 pandemic that lasted between the spring of 2009 until the summer of 2010 was the first pandemic in the 21 century, which triggered a massive response in the Norwegian health and care sector. The evaluation and examination process that took place a year after the pandemic shows that hundreds of people were examined and treated, approximately 1300 of those people were treated in hospitals, and around 200 of these were treated in the intensive care unit. Research showed that in the beginning of 2010, approximately 60 percent of the population had a measurable amount of antibodies, either from being previously infected by the virus or due to the comprehensive vaccination strategy. Around 45 percent of the population received the vaccine in the initial vaccination phase, and this effort have later been labelled the largest vaccination campaign in the history of the country. The WHO declared the end of the pandemic on 10th of August 2010 (Folkehelseinstituttet, 2015).

Internationally, the 2009 H1N1 crisis response was characterised by urgent decision making under uncertainty (Baekkeskov, 2016; Boin et al., 2017; Rosenthal, Boin, & Comfort, 2001). It took about four to six weeks to produce the large quantity of vaccines, and the "advance purchase agreement (APA)" obligated some countries to order the vaccines when the WHO declared the 2009 H1N1 virus as a 'Phase 6 pandemic'³ on 11th June 2009 (Baekkeskov, 2016, p. 299). Even though countries are free to manage their own strategies, some countries viewed this agreement to be too invasive, which has since led to a discussion

³ "During Phases 5-6 (*pandemic*), actions shift from preparedness to response at a global level. The goal of recommended actions during these phases is to reduce the impact of the pandemic on society." (World Health Organization, 2009, p. 41)

on re-examining the role of the WHO and international cooperation during a pandemic (Flahault & Zylberman, 2010, p. 333)

Even though the Ebola outbreak did not directly affect Norway, it was reported one import case in the country (Helse- og omsorgsdepartementet, 2019, pp. 17-18, 29-30 ; Meld. St. 10 (2016–2017)). The need for a national preparedness plan against Ebola came due to the outbreak of Ebola in West Africa in 2014, where several Norwegian citizens aided in the treatment of patients in the afflicted areas. This had created a situation where Norway had to prepare for the possibility that infected aid workers could return from the inflicted areas. The interim Preparedness Plan against Ebola in 2014 was developed as a part of the ‘regulatory framework for infectious diseases’ (Helsedirektoratet & Folkehelseinstituttet, 2014), and a strategy to manage similar infectious outbreaks have later been included in the National Emergency Preparation Plan against Outbreaks of Severe Infectious Diseases (OSID). The Directorate of Health (HDIR) stated that the national crisis management strategy of the Ebola epidemic have strengthened the infectious disease preparedness in Norway (Helsedirektoratet, 2015, p. 4), and in the evaluation of the Ebola epidemic, three learning points were pointed out. First, the need to develop procedures for Norway’s contribution to solve international health crises, with an emphasis on the clarification on roles and responsibilities both cross-sectoral and within sectors. Second, a revision on how municipalities manages its responsibility to deal with the outbreaks of infectious disease was suggested, and finally, that Norway need to establish continuous national guidelines on medical evacuation by plane, helicopter, or boat (Helsedirektoratet, 2015).

2.2 THE PUBLIC HEALTH ACT OF 1860

The Public Health Act of 1860 (PHA) “*Sundhedscommissioner og om Foranstaltninger i anledning af epidemiske og smitsomme Sygdomme*” (Sunnhetsloven, 1860) was the first Norwegian law that set out to create a legal framework on how to best combat and control the spread of epidemics and infectious diseases. Before this act, there were still specified laws that set out to manage the various disease outbreaks at the time, like tuberculosis, sexually transmitted infections, guidelines on vaccinations, protection against the transmission of infectious diseases from abroad, cholera, typhus, and pest control (Innst. O. nr. 37 (1993-1994)). The PHA of 1860 would later prove to have a massive impact on the development of the Norwegian health and care sector, and the second chapter was in effect until 1994, when it

was superseded by the Act Relating to Control of Communicable Diseases (Act of 5 August 1994, No. 55) (CCD) (Folkehelseinstituttet, 2019; NOU 2012: 17).

In the early 1800s, Norway was, as many European countries, plagued by cholera and typhus epidemics. In the 1830s, commissions were implemented in some Norwegian cities to draft management strategies (Elvbakken & Ludvigsen, 2016). In 1850, a proposal for a new public health act was set in motion, and the ministry's advisory medicine committee was trusted to take on the task to draft a new act, which had a stronger emphasis on the prevention and preparedness for epidemics, pandemics, and contagious diseases. The creation of this legal framework was inspired by international legislation, particularly from Britain (Elvbakken & Ludvigsen, 2016, p. 12). The working committee chose to separate the two key aspects of the PHA, as it was intended to cover the political and administrative organisation on the one side, and disease prevention and combating infectious diseases on the other (Schjønby, 2001). Accordingly, the act was divided into two main chapters; the first chapter on "*Om Sundhedscommissioner*" or "about the health commission" and the second chapter on "*Angaaende særegne Foranstaltninger imod epidemiske og smitsomme Sygdomme*" or "Concerning specific measures against epidemic and infectious diseases".

The first chapter set out to define the authority and agency of the health commission. With the implementation of the 1860 PHA, all municipalities were required to have a health commission. In municipalities, these commissions were to be headed by state employed district physicians, and the city physician were to have the main responsibility in cities (Elvbakken & Ludvigsen, 2016, p. 11). PHA had two main motives for the local and political legitimacy on its preventative measures. First, there was a concern that the statutory provision to prevent or combat disease could impede personal freedoms. Consequently, in such cases, the local board of the municipality should decide on such provisions. The second motive was strongly influenced by the increased focus on democracy and egalitarianism – two important ideologies of that era – and the committee stated in short that "*De locale Styrelser, valgte af Befolkningen selv, bør det overlades at træffe Bestemmelser af hiin Art, naar de have overbeviist sig om deres Hensigtsmæssighed*" (Schjønby, 2001). Loosely translated to 'Local government, elected by the people, should be free to make regulations of another kind, when they are convinced of it advantageousness'.

The second chapter in the PHA recognised what was considered the most important public health related aspect at the time, mainly to combat and protect the population against infectious diseases. This chapter also set guidelines that described the organising of an

emergency apparatus, or a commission, that would be set in motion in the case of an epidemic or infectious disease outbreak. The commission was given a great amount of authority, and was also expected to instigate measures on their own initiative. The PHA implemented an administrative and legal framework for preventative healthcare work, which happened at a relatively early time in history. Through the established framework reform and the flexibility it offered, it was considered an important tool for the local health and care sector, the medical professionals, and the municipality's health councils that operated in the districts of Norway. This allowed districts the freedom to treat local disease outbreaks with a more specialised and effective approach, in contrast to a strategy that was based on a generic, national decision (Schjønsby, 2001). To this day, this principle of decentralisation in decision-making processes remains a vital part of the Norwegian crisis management and societal security strategy, known today as the 'Principle of Subsidiarity', or the principle of proximity.

In 1982, the Act Relating to the Municipal Health Services (Act of 19 November 1982, No. 66) (MHS) superseded the first chapter of the PHA (Kommunehelsetjenesteloven, 1982). The MHS was superseded in 1991 (by LOV-1991-12-13-81), and then again on 1st January 2012, where it was superseded by the Act Relating to Health and Care Services (Act Of 24 June 2011, No. 30) (HCSA) – which is the standing legal document to this day (Helse- og Omsorgstjenesteloven, 2012; UiO Law Library). Some elements of the original PHA of 1860 still remains in the current legal framework for the health and care sector, despite the fact that more is known about combatting infectious diseases today, than what it was in 1860. The field of health and care policy have grown immensely in the last decades, in accordance with new medical discoveries, and with the introduction of new laws and regulations. One of the legal principles that has been continued throughout the revisions of the PHA is the division of authority between local and national health and care services, which would also include the division of responsibilities in different scenarios, particularly in the early outset of an outbreak of an infectious disease. This idea is related to the core essence of the first chapter of the PHA, and remains an important principle in today's response framework. Hence, it will be fruitful to explore the horizontal and vertical coordination of crisis management in the theory chapter as it guides the preparedness strategy in most areas of the Norwegian crisis management. The second chapter in the PHA that deals with epidemics and infectious diseases was, as before mentioned, superseded by the CCD in 1994 (Smittevernloven, 1994). This law guides the legal framework in the Norwegian crisis management before or during a pandemic and epidemic outbreak, and the available measures

to contain or control the spread of the disease (Folkehelseinstituttet, 2019). As a result, the PHA could be regarded as the most central health and care related law in the 19th century (Falkum, 1978; Grund J, 1982; Larsen, 2010; Schiøtz, 2010).

2.3 LEGAL AND REGULATORY FRAMEWORK

The *Act Relating to Control Of Communicable Diseases (Act Of 5 August 1994, No. 55) (CCD)* have undergone three revisions since it was first adopted in 1994; the first round of revision was in 2004 where small changes were made in order to be able to instigate an inter-municipality collaboration. More comprehensive revisions was made in the second round in 2019 (Folkehelseinstituttet, 2019). A third revision took place in 2021, in order to be able to initiate measures to contain the spread of the Corona virus. § 1-1 in the CCD states the purpose of the law, which is to (1) shield the population from infectious diseases, by preventing the spread of a communicable disease to, but also, within Norway. It (2) instructs the authorities to instigate necessary measures and coordinate its contagion control activities, in addition to (3) safeguarding the affected individuals or groups security under the law in regards to disease containment measures (Smittevernloven, 1994, § 1-1).

The principle of liability is enshrined in § 22-1 of the *Health Preparedness Act (Act of 23 June 2000, No. 56 Relating to Health and Social Preparedness) (HSP)*. The purpose of this law is to protect the life and health of the population, and to contribute to providing necessary health related services during crisis, catastrophes, in peaceful times, and wartime.

The purpose of the *Specialist Health Services Act (Act of 2 July 1999, No. 61 Regarding Health and Care Services) (SHSA)* is divided into six areas, as mentioned in § 1-1 and is to (1) promote public health and to counteract illness, injury, suffering, and disability, (2) contribute to ensuring the quality of services, (3) equal services, (4) the best utilisation of resources, (5) ensuring that the services offered are being adapted to the need of the patient, and (6) making sure that the service offered is available to all patients.

The '*Instructions for the Ministries' Work with Civil Protection and Emergency Preparedness*' (*Instruction of Societal Security*) is aimed at ensuring that all Ministries have an overview of its own sectoral preparedness (Helsedirektoratet, 2019a, p. 4). The rule was presented by the JBD on September 2017, and superseded the instruction from 2012 (Samfunnssikkerhetsinstruksen, 2017). It naturally follows the guiding principle of liability,

which is at the core of every document on preparedness and crisis management in Norway (Helsedirektoratet, 2019a, p. 4).

2.4 CLIMATE CHANGE, CONTACT WITH NATURE, AND HUMAN ACTIVITIES

Humans have known for centuries that the climate could affect epidemic infections, even before we understood the nature of infectious agents (McMichael & World Health Organization, 2003, p. 103). Temperature, rainfall, drought, floods, and other climatic conditions have affected and been connected to outbreaks of epidemic diseases throughout history, as McMichael and the World Health Organization (2003) provides a host of examples on in the book on climate change and human health. During the last couple of decades, it has been possible to witness an increasingly shifting global landscape, with increased travel activity, an escalation in man-made climate changes, and increased contact with previously untouched nature and wildlife. These factors can, in part, be a driving force behind the next big pandemic or pandemic influenza (see: Saunders-Hastings & Krewski, 2016), as have become clear during the Corona pandemic. Man-made climate changes, an increased density of domesticated animals for food production, illegal wildlife tracking, the transformation of previously undisrupted nature and wetlands into farmlands or industrialised areas – which have led to more frequent contact with wildlife – and antibiotic resistance both in humans and domesticated animals, are all factors that have contributed to the heightened possibility of a new pandemic. Uncontrolled and illegal trade and consumption of wild animals have increased the possible human exposure of diseases that these animals carry. Consequently, it is no surprise that several of the recent outbreaks of influenza and other diseases have its origin in wet-markets or markets that sell a mix of domesticates and wild animals, creating the perfect conditions for the development of zoonosis⁴ (Jeffries, 2020) which can be transmitted through either pathogenic viruses, fungi, bacteria, parasitic protozoa, or other organisms.

Climate changes have also led to a greater unpredictability on when and where the next crisis is expected to strike (Direktorat for Samfunnssikkerhet og Beredskap, 2019, p. 9). Previous pandemics have mostly originated through zoonosis, as influenza viruses in animals have later become transmittable to humans (Direktorat for Samfunnssikkerhet og Beredskap, 2019, p. 68), such as the 1918/19 H1N1, 1957 A/H2N2, 1968 A/H3N2, and the 1977 H1N1,

⁴ Infectious diseases that could be transmitted from animals to humans.

or other viral infections like HIV/AIDS and Ebola (Folkehelseinstituttet, 2014). The white paper Meld. St. 10 (2016–2017) (pp. 74-75) notes that population growth, climate changes, economic growth, and an increased dependency between different functions in society have contributed to the increased harmful potential of natural events. As of now, there are few, if any, contemporary Norwegian preparedness plans that address the increased threat of emerging pandemics in the context of climate change, and that provides strategies on how to manage such crises. Hopefully, measures that target these serious issues will become more important in future crisis management, particularly measures that also target disease and not solely natural disasters, in order to create a more holistic perspective on the challenges societies might face in the future.

Climate changes, increased travel and trade activities, and the ever-expanding global food market are considered high risk factors in regards to future pandemics. One of the expectations for the preparedness plan would therefore be that they recognise this issue, and suggest measures to counteract this increased threat. Another expectation is that the plans focus on the overarching structures within crisis management, so to be applicable to all types of unforeseen pandemic crisis, as the same pathogen rarely appear twice

2.5 THE NORWEGIAN CRISIS MANAGEMENT AND PREPAREDNESS STRATEGIES

The Norwegian pandemic preparedness is based on encounters with previous pandemics, in addition to other crises and complex emergencies. These experiences are collected in preparedness plans, which is intended to guide decision makers on their management strategies if a similar crisis was to emerge. The Norwegian preparedness is based on four contextual principles (Helse- og Omsorgsdepartementet, 2018b) that inform how to organise responsibilities and agency in a crisis, which all happens within strong sector departments with ministerial responsibility. As is about to be uncovered, strong sectors can further complicate cross-sectoral management strategies, as the different sectors are responsible for the creation of their own preparedness, and the strong vertical, top-down coordination inhibits horizontal coordination efforts.

A crisis is marked by a felt threat, a perception of urgency, and a sensed uncertainty (Ansell, Boin, & Keller, 2010; Boin, 't Hart, Stern, & Sundelius, 2017). In order to counteract these issues, creating a situational overview and leaning from previously created preparedness

plans could be helpful in order to regain a sense of control. Planning and preparing for crisis of unknown unknowns require an operational and general framework, which allows for extensive exercises and training events as there is no way of knowing how the crisis is going to unfold or what it is going to look like. Such situation often take the form of a wicked issue, where uncertainty, complexity, and diversity guide the available decisions (Lægreid & Rykkja, 2015; Head and Alford, 2013). It is impossible to find a solution to an unknown problem, and hence, the main goal of crisis management should not be to seek out solutions, but rather focus on management strategies that can reduce the severity of the problem.

Pandemics have, as mentioned previously in this chapter, been present for most of human history. Humans have always had to deal with the occasional outbreak of infectious disease, varying in form, size, and severity. How preparedness strategies and measures are established would correspondingly be dependent on how previous outbreaks have been managed in the past. It became apparent during the Covid-19 pandemic that many of the specific measures were unable to manage the outbreak of a pandemic that was not caused by an influenza virus, though the exercise of creating the plans did provide the governing bodies the ability to stay flexible and improvise when information was scarce. For instance, one of the measures that was advised against before the Covid-19 pandemic was to close national borders, mass testing and quarantining travellers for suspected infection, as “such efforts have a small effect, are resource depleting, and contradicts the principle of not slowing down normal activities” (Helse- og omsorgsdepartementet, 2014a, p. 60). Nevertheless, the International Health Regulation (IHR) states that the general secretary of the WHO can declare an event as a Public Health Emergency of International Concern, which can trigger a number of temporary and lasting restrictions on for instance goods and people at border crossing points, etc. (Helse- og omsorgsdepartementet, 2019). As was experienced during the Covid-19 pandemic, restricting movement across borders was a successful measure, as it prevented further mutations from taking hold in Norway, in addition to reducing unnecessary cases of infection.

As pandemics are not only managed domestically, but also have an international perspective, national plans would need to stay updated on international suggestions and regulations for preparedness and prevention. Especially since the world have become increasingly more connected, and challenges have become progressively more transboundary. Therefore, a common, international framework for possible management paths have gained an increased value in the last decades, and national plans would gain invaluable learning

experiences from further incorporating common guidelines from organisations Norway is a member of, such as the WHO and the EU.

3. THEORY

Pandemics are hard to manage for any organisation, especially with the added element of the situational stress of not knowing what kind of problems you might be facing. However, some crisis are more manageable than others, and some crisis bring about the possibility to increase the level of preparedness by implementing training exercises and management strategies. Some organisations experience a lock-in on a path that might limit the choices available to take action, and this could in turn inhibit the creativity and improvisation in the crisis management efforts of the organisation. Therefore, the first chapter will address the ways in which the path of the preparedness plan can dictate future measures, could prove itself as a useful perspective for further analysis. As the term – or the notion of – “crisis” will be at the core of placing the challenges of a pandemic in a societal context, the second prerequisite would be to establish what a crisis is. Therefore, this chapter will start by defining the term ‘crisis’, and present how a crisis might come to be. The third chapter will cover the tools of which governments, public or private organisations, or actors can utilise in their crisis management, and in which way public policy and structures might complicate the preparedness and crisis management, before moving on to the last chapter on the expectations of this thesis.

3.1 PATH DEPENDENCY

According to Zürn (2018, pp. 91-100), path dependency is one of the core concept of historical institutionalism and is thought to be a set of critical junctures that can lead to organisational decisions, which later culminate into a certain path (Karlsen & Isaksen, 2008; Mahoney, 2000). There are several different understandings of path dependency, but they all include the notion of self-reinforcement or positive feedback, i.e. mechanisms or instruments that alter beliefs, opportunities, and the ambition of the involved actors, to one that is in favour of already existing practices. The self-reinforcement could lead to a deepening of an organisation, to a point where it would be too costly to alter the organisational design, or to diverge or alter the path. Small changes can also influence positive feedback processes in the early stages of a process and they can produce more than one outcome and generate patterns of branching of historic development (Pierson, 2004, pp. 20, 21). Historic processes that create path dependencies is strongly related to the positive feedback mechanisms, or by self-reinforcement (Arthur, 1994; P. David, 2007; Goldstone, 1998; Pierson, 2004). As one particular path has been established, reversing back to a previous historic branch can be very

challenging (Pierson, 2004, p. 10)(see Figure 1). Positive feedback can also contribute to the explanation for why dysfunctional decisions made at a critical juncture remains unaltered (Zürn, 2018, p. 92). External shocks could force new critical junctures in an organisation, and consequently, it can create room for agency and opportunity.

Pierson (2004, p. 18) use the characteristics of positive feedback processes, previously summarized by Arthur (1994), in order to explain the dynamic processes that can contribute to the creation of multiple outcomes with positive feedback, which all depends on the specific sequence of the unfolding events, i.e. processes in which history matters (Pierson, 2004, p. 18). The characteristics are summarised to four perspectives, being unpredictability, inflexibility, non-ergodicity, and potential path-inefficiency. First, since previous events are random and have a large effect on the path, the different outcomes would be impossible to predict, as several outcomes could be possible. Second, once a path has been chosen, and some time has passed, a shift from one path to another would prove to be more difficult as alternatives that once were plausible would now be irretrievably lost and ‘locked-in’ (Pierson, 2004, p. 11). Third, small events are ‘locked’ in the path, and the influence of accidental events would be hard or impossible to remove from the path, and are challenging to overlook as they continue to affect future choices. Fourth, the path might prove to be less efficient than alternative paths, and generate a lower reward than other previously possible alternatives. In this case, history do matter since previous events are more impactful than later events, and various sequences could produce different outcomes. Consequently, by each step taken down the path, the more likely it is that one would continue to move down that same path, as shown in Figure 2.

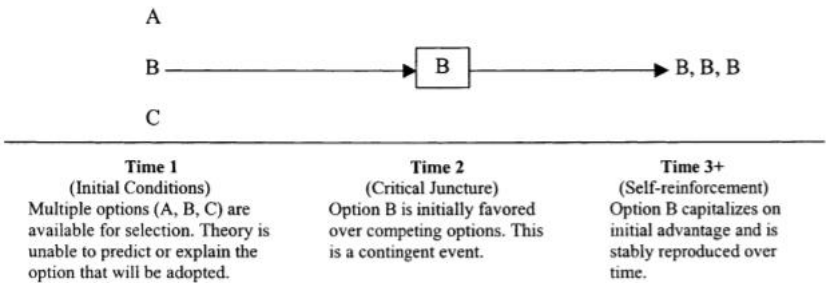


Figure 1. Illustration of contingency in self-reinforcing sequence.

Figure 1 Illustration of contingency in self-reinforcing sequence (Mahoney, 2000, p. 514)

Discovering how the path started could become an important tool in order to analyse the consequences of organisational arrangements, social constructions, and relations that show how inequality of power are reproduced and reinforced. It can also act as a corrective measure for the social arrangements in place, which can be explained though the needs of those powerful actors they cater to (Pierson, 2004, p. 11). Traditionally, path dependency could be explained through “history matters” or “historical causation” (Pierson, 2000; 2004, p. 11), where one process or event triggered a reproducing pattern that continued long after the original process or event had ceased to reoccur. By separating historical events into periods separated by critical junctures, or breaching points, historical development becomes apparent, and new paths emerge (Hall & Taylor, 1996, p. 942). Therefore, path dependency becomes an important tool in the study of processes of change (P. A. David, 2007), especially in a historic institutionalist perspective.

Path dependency could be defined as “a dynamical process whose evolution is governed by its own history [...]” (P. A. David, 2007, p. 92), or “as a situation in which individual actors or organizations have lost their power to choose among alternatives [which] excludes path-breaking behaviour” (Jörg, Georg, & Jochen, 2009, p. 702). Jörg et al. (2009, p. 696) also include a definition of organisational path dependence as “as a rigidified, potentially inefficient action pattern constructed by the unintended consequences of former decisions and positive feedback processes”. Levi, on the other hand, provides a narrower definition on path dependency:

Path dependence has to mean, if it is to mean anything, that once a country or region has started down a track, the costs of reversal are very high. There will be other choice points, but the entrenchments of certain institutional arrangements obstruct an easy reversal of the initial choice. Perhaps the better metaphor is a tree, rather than a path. From the same trunk, there are many different branches and smaller branches. Although it is possible to turn around or to clamber from one to the other and essential if the chosen branch dies the branch on which a climber begins is the one she tends to follow. (Levi, 1997, p. 28)

As decisions on what path dependency really is, and descriptions varies from narrow to broader concepts, clear definitions become harder to find (Pierson, 2000, p. 252). Concepts that focus on how previous events have shaped current decisions, which focus on the idea that ‘history matters’ are not very helpful in creating an understanding of path dependency. In order to figure out the value of a social variable, it becomes necessary to determine how the

social variable came to be, and what path it took to get there. Previous events do not always cause paths to move in the same direction, as they can create a reaction in an opposite direction as well.

How a process becomes path-dependent is an equally important aspect as the definition of path dependency and positive feedback mechanisms. To summarise this, Schreyögg and Sydow (2011, pp. 323-326) divides the process into three phases, that constitutes different settings of actions and decision-making, and which are governed by various casual-regimes (Schreyögg & Sydow, 2011, p. 323).

Phase I, or the preformation phase. Previous events affect future choices, which cannot be predicted, and a self-reinforcing process can be set off, oftentimes unintentionally, by small events, which can create a ‘critical juncture’ that ends in Phase II. Whatever the size of the event that took place in shaping the path, its character cannot be observed unless a process has been formed. In the early stages of theory development on path dependency, the preformation phase was not restricted in its scope of action, and was viewed as an open situation where rationality could explain choices that were based on unconstrained decisions (Arthur, 1989, 1994). This, however, did not account of the importance of history in this phase. In figure 2, the darker areas are intended to show the “institutional heritage” of the available choices (Schreyögg & Sydow, 2011, p. 324).

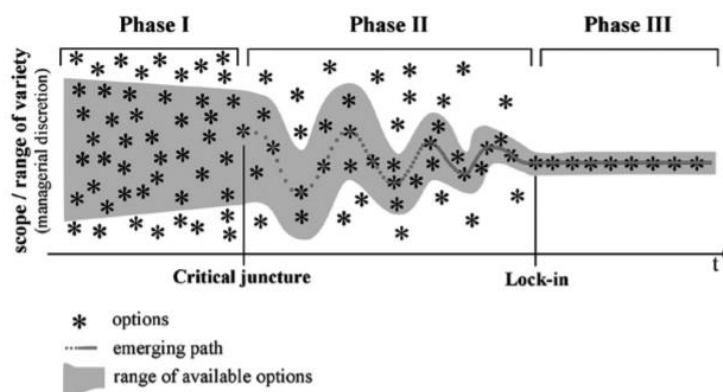


Figure 2 "The constitution of an organizational path (Sydow et al., 2009, p.692, modified)" collected from Schreyögg and Sydow (2011, p. 323)

Phase II, the formation phase, is where a new dominant pattern is likely to take form, and other patterns face issues in attaining acceptance and attention, which further solidifies the path-creating process. This phase finds itself in a regime of positive and self-reinforcing

feedback loops, which determine a pattern of social practices. Some patterns become more predominant, and could affect the possible paths, which consequently, could lead to a critical juncture that occur between phase I and II. In Phase II, it becomes increasingly more challenging to reverse the central pattern of action, as the range of option narrows. Decisions made in this phase are not made by accident, but they are not predictable either, i.e. the processes have become non-ergodic.

Phase III, the lock-in phase, is where the availability of possible options are so restricted that they eventually create an organisational lock-in, where dominant patterns solidifies. The dominant pattern can take on deterministic characteristics in extreme cases, where all future actions are compelled to replicate the dominant path, such as with the QWERTY⁵ keyboard. However, it is necessary to include slight modifications to the understanding of lock-ins' in the case of organisational paths, as the processes are more ambiguous and complex due to their inherently social character. In order to conceptualise, using a corridor as an example might serve as the best way to illustrate the reasoning for why the final stage of path dependency processes should be viewed in a less restrictive way, as to allow some room for variation (as shown as a shadow in the Phase III, in Figure 2). However, lock-ins can cause the organisational system to lose its necessary flexibility, lead to insufficient measures, and force the organisation to remain on the current path, which simply replicates inadequate solutions.

We could regard the establishment of the PHA as the starting point of the modern Norwegian pandemic preparedness and the following legal framework, in addition to the health and care management of infectious diseases, and for establishing lines of responsibility. Rooted in previous encounters with epidemics such as tuberculosis, cholera, and typhus, a commission was inserted in some Norwegian cities to manage such outbreaks, using strategies similar to those used in the Middle-Age (Elvbakken & Ludvigsen, 2016, p. 12). The experiences from the first part of the 1800s would prove vital for the establishment of the PHA, where its two chapters would later transform in to the HCSA and the CCD, which is the current legislation on the area. Though the principle of proximity and liability was first formally introduced in the white papers 'St.meld. nr. 17 (2001-2002) (p. 4)' and 'Meld. St. 29 (2011–2012) (p. 39)' the PHA had still acted as the forbearer of these principles, as it had already established the division of power between the local and national management of

⁵ Regional alterations have been made to the QWERTY keyboard, such as the German QWERTZ keyboard layout, where for instance Z and Y have changed positions.

infectious outbreaks, following a principle of decentralisation. Hence, the implementation of the PHA could be regarded as a crucial event that set of the current path of crisis management in a Norwegian context.

How is path dependency observed in the context of preparedness planning and crisis management? The theory emphasises the impact of historical events, often catch-phrased as ‘history matters’, even though this has been labelled as an explanation that do not take into account other factors . Path dependency is a series of complex non-ergodic processes i.e. processes that are unable to detach themselves from history (Garud, Kumaraswamy, & Karnøe, 2010, p. 760). Once locked into paths by the self-reinforcing mechanisms, the paths’ evolution is determined by contingencies or coincidences, and unless an external shock occurs, actors or organisations remains locked in their path. The cost of changing path could also be too high (Pierson, 2000, p. 252), which makes it an undesirable option for many organisations. In the case of pandemic preparedness, plans are usually revised during the crisis in order to be able to better manage the different aspects that have not properly been planned for, or in the evaluation process that follows after the crisis has ended. Additionally, the urgency to reevaluate or amend preparedness strategies are lower in the period between pandemics. The issue loses its ‘importance’ – or popularity – once the crisis is over, and more ‘newsworthy policy’ issues emerge. Consequently, it could be taken off the agenda.

Pandemic preparedness and management is not a new endeavour in human history, and methods that was used for centuries have been adopted and continued into today’s strategies – quarantine and isolation being two of the most notable measures. In addition, medical advances in the last decades has made it possible to screen and test the population as an infectious control measure. To control the spread of communicable diseases, vaccines have also become a vital part of stopping the spread of diseases.

Path dependency goes beyond merely being trapped in past dependencies. It recognise the importance ‘small’ events play in self-reinforcing processes and that ultimately shape the development of the path. Self-reinforcing processes are triggered by contingent events, which acts as conditions for the paths future trajectory. These events are rarely clear at the beginning of the events, but assert themselves later on in the ‘path’. In the beginning of a path, an actor or organisation have a range of opportunity to change or alter the outcome, and there is a greater room to make decisions based on different sources of information. This range of alternatives narrows with time – i.e. when they are further down the path – and the outcome of

the processes become more determined by each previous choice made. This shows that the processes of the paths are non-ergodic.

3.2 CRISIS TYPOLOGIES – WHAT CONSTITUTES A CRISIS?

Before an understanding of crisis management in the selected preparedness plans can be constituted, a definition of what a crisis is, and what it entails, would be necessary. In academic discourses, several definitions and criteria exist when describing a crisis. The core of these definitions is that a crisis is marked by a sudden development of a phase of disorder, where those involved or affected experience a sense of urgency, uncertainty, and threat (Ansell et al., 2010; Boin et al., 2017). It is a situation where core values in a social system is challenged, and where immediate action is required. Information available at the beginning of a crisis is often scarce, and conditions of deep uncertainty reign when citizens and organisations look to their leaders for answers. The crisis management systems and structures are as a consequence, subjugated to a real-world stress test that expose and challenges the resilience of the political system (Boin et al., 2017).

Not all events that takes us by surprise, or challenges the political systems, could be defined as a crisis. Usually, difficult situations that take us by surprise could be described as complex emergencies, i.e. explosions, fire, flooding, landslides, etc. which all occur with some degree of regularity, and where the management strategies can be rooted in previous experiences from similar kinds of events (Ansell et al., 2010; Boin et al., 2017). Similar to complex emergencies, crises evoke a sense of *perceived threat* (otherwise known as the Thomas theorem) (Boin et al., 2004, p. 380). However, in the case of a crisis, past experiences cannot provide sufficient guidance to policymakers and first responders on how resolve the crisis. Additionally, a large number of people would sense that widely shared core values of the societal system had come under threat, and the perceived importance of these values or systems by the population plays a part in whether the sense of crisis deepens or not. When faced with inconceivable threats that challenges available resources and puzzles our imagination, it increases individual and collective stress (Boin et al., 2017; Janis, 1989; LaPorte, 2007)

A sense of *urgency* would also need to be present in order for a situation or event to be regarded as a crisis. The sense of urgency is often socially constructed, and not an inherent property of the situation or event. If a large number of different and dispersed people perceive

the threat as something that need to be managed right away – as an issue that cannot wait, a complex emergency can turn into a crisis. *Proximity* to a crisis also influence the decision of determining the urgency, and a distant observer will experience a less pressing sense of a crisis than the threatened individuals themselves. In the case of previously outbreaks of communicable diseases and epidemics, e.g. the SARS outbreak in 2003 or the continuing outbreaks of Ebola from 1976 to today (2021), Norwegian citizens would have felt a lesser sense of urgency, in comparison to the people residing in the affected areas. Nevertheless, Norway still produced a preparedness plan against Ebola, due to the increased fear that aid workers could be infected upon their arrival, and cause mass-outbreaks of the disease.

As the emerging crisis starts to take form, a high level of *uncertainty* becomes apparent, as previous experiences provide little to no help or guidance for policymakers in their effort to instigate specific measures. Both the fear of potential consequences, and the nature of the threat, affects the search for solutions. Under such circumstances, policymakers face impossible choices. On the one hand, they do not have a clear overview of the situation at hand, and possess no knowledge of whether it is possible to act without exaggerating the situation. On the other, there is an expectation that a rapid response will be instigated, even if policymakers might still be racing to figure out exactly what happened, and how to best manage the crisis. (Ansell et al., 2010; Boin et al., 2017).

Boin et al. (2017, pp. 7-9), presents two different kinds of uncertainty in a crisis: the “known unknowns” and “unknown unknowns”. Crisis of known unknowns are understood to be events where planning and countermeasures are possible to predict, train for, and that are easily implemented. For instance, local governments and collaborative organisations are able to prepare for an avalanche or mudslide, even if they do not know the size or the location of the potential event. These situations, which periodically occur, have operating procedures in place, and involved actors have had the time and resources to plan and prepare for these kinds of events.

The latter type of crises, the unknown unknowns, are epitomes of crises that is hard to solve. Several elements happens simultaneously or within a short time period, and the situation is complex, ambiguous, and messy. Oftentimes, it is a “new” or previously un-encountered type of crisis, which makes cross-sectoral communication and coordination more complicated, as different organisations and actors have contrasting information about the situation. The unfortunate consequence of crisis of unknown unknowns is that it can make it harder to determine which informational source to trust or how to think about the situation, as

there is not a clear plan on how to “do the right thing”. Consequently, such crises makes an already messy crisis harder to manage.

Therefore, the crisis management would need to contain a set of extraordinary and interrelated challenges experienced by the governing bodies. A good response to an emerging crisis usually involves several pre-existing organisations – both private and public – in addition to newly established ones, both nationally and internationally (Boin et al., 2017). The perception of a crisis, and how a crisis is managed, is in many cases a matter of framing. Actors can chose to up-play or downplay the urgency or the need for a quick response. How actors in the same political system understands similar events during a crisis can also differ, especially in cases where there is differing views and understandings of the situation, sometimes even within the same response team. Crisis management can in some instances cause political leaders and other stakeholders to compete for the opportunity to frame the cause and nature of the problem, and subsequently, the best method to solve the crisis. In turn, this could create competing views amongst their key audiences, and in a worst-case scenario, it can create a delay to the implementation of measures, and divide the citizens’ perception of ‘the right thing’ to do.

As the very definition of a pandemic is that it reaches across national borders, considering the transboundary dimension of a crisis would also be required.. In addition to a more traditional definition of a crisis, the transboundary dimension emphasises the complex and interconnected web of critical infrastructure, which have come to be a core characteristic of a globalised, modern society (Ansell et al., 2010; Boin, 2009; Boin et al., 2017; Rosenthal et al., 2001; Rosenthal, Charles, & 't Hart, 1989). Ansell et al. (2010, pp. 196-197) provides three dimensions that can be used to determine the transboundary nature of a crisis: it would need to cross geographical, political, and functional boundaries, and at the same time transcend the boundaries of time. These crises pay no mind to neither physical nor functional borders, and can wreak-havoc across different sectors and nations. The financial crisis of 2008 is a fitting example of a transboundary crisis, as it started in the USA and rapidly affected the global financial markets, and consequently, caused people to lose their livelihood on the other side of the world. Both pandemics and financial crisis are examples of crises that do not respect national geographical borders.

Crises that move into the functional dimension can be hard to manage, as there are several non-connected actors involved with different operating imperatives and logics. As these organisations could be created to operate individually, a crisis that force them to

collaborate with other organisations, agencies, political interest groups, or government branches, often come as an unwelcomed surprise. Cross-sectoral collaboration could also prove to be a difficult task in crises, even if such collaborative efforts are implemented in preparedness plans in advance. If their day-to-day operations are too different from one-another, and there has evolved a sort of ‘siloesation’ within the organisation, there might not be any arenas for contact, coordination, or collaboration.

Most crises usually have a clear beginning and end, but that is not always the case with transboundary crises. An event of magnitude could transcend the traditional boundaries of time, where it would be difficult to pinpoint a place in time where it originated, or where it might have ended. The effect of such events can be felt several years later, and it run deep in the place(s) it has affected. Crisis such as this have no clear beginning, it escalates suddenly, and travel across geographical domains (Boin, 2009, p. 368). This risk runs high in the case of a pandemic, as it seemingly appeared out of nowhere, and the possibility for it to have spread undetected for a longer period of time would always present. In the more severe pandemics, it can be difficult to determine the exact end of the crises, as it might have brought about a wide range of long-term side effects that continues to affect people and societies for weeks, months, or years to come. Would the crisis be over the moment immunity in the majority of the population was achieved, or would it be when the long-term effects had subsided or been cured?

In the early stages of a pandemic, leaders might feel the need to properly convey the gravity and seriousness of the situation to its citizens. In order to accomplish this, they need to frame the situation in a manner that conceptualises the issue, and change people’s attitude, towards one that is more favourable for the desired outcome (Chong & Druckman, 2007). They need to frame their communication in a manner that organises their “everyday reality” (Tuchman, 1978, p. 193) and provide “meaning to an unfolding strip of events” (Gamson & Modigliani, 1987, p. 143). The unfolding events during the first days or weeks of a pandemic would, in most situations, be defined as a crisis by either the government or the media. As more information on the pathogen becomes available to the public, and there is a sense of re-gained control over the situation, the general perception of crisis may decrease. Boin et al. (2017, p. 103) states that a crisis is a temporary situation or a state of exception, but what happens when the sense of crisis disappear while the actual crisis continues?

When the felt experience of threat, urgency, and uncertainty decreases, the positive attitude towards further measures might disappear as well. However, any crisis – and

particularly pandemics – are inherently different from any previous crises. During a pandemic, pathogens mutate, which allow for the possibility that the pathogen evolves and alter its ability to spread and cause harm in humans and animals, which can make crisis management more challenging. More importantly, our perception of crisis is largely affected by what, and whom, the crisis affects. Our sense of immediate threat is weaker if the event takes place far away from us, both geographically or on a functional level. One example is the earthquake – and subsequently the tsunami – that causes the Fukushima Daiichi Nuclear power plant disaster in 2011, which did not directly affect Norway. In this disaster, there was no felt immediate sense of danger to the Norwegian population. On the other hand, the 2004 Indian Ocean earthquake, and the following tsunami (Sumatra–Andaman earthquake) did instigate changes to the Norwegian crisis management and preparedness strategies, e.g. it inspired the formation of a crisis support group and the establishment of the Cabinet Crisis Council in 2006 (Lango et al., 2011, p. 176). In the aftermath of the Sumatra–Andaman earthquake, which affected a large amount of Norwegian citizens on their holiday, the government produced a white paper (St.meld. nr. 37 (2004-2005)) on preparedness and crisis management, which directly referred to the tsunami disaster and how it illuminated the need to improve the national preparedness. The implementation of policy following this white paper would later become one of the reasons for creating the first National Health Preparedness Plan (NHPP) in 2004 (Helse- og Omsorgsdepartementet, 2014b, p. 4). Following the liability principle, the Ministry of Foreign Affairs (MFA) was tasked to manage the tsunami disaster, since the crisis had harmed and killed Norwegian citizens abroad. The MFA was not prepared to manage such events, and they were quickly criticised for their poor coordination and response to the situation.

These two cases demonstrate the difference in crisis management between the tsunami disaster in the Indian Ocean and the Fukushima Daiichi Nuclear power plant disaster, where the former triggered a shared experience of a “call to action” from both government officials and the citizens of Norway, while the latter did not. *What, where, and more importantly whom* a crisis hits, have a substantial effect on our perception of the seriousness of a crisis, and whether we *feel* affected by it or not. This could in turn influence whether there is a felt obligation to follow safety measures in place to manage the situation, or not. Likewise, a pandemic infection that only affect the elderly might not be perceived as equally as serious as an infection that mainly affected children.

A threatening event is, as mentioned above, more likely to be defined as a crisis by those closest to the event. It is also important to keep in mind another distinction of such threat, namely, *what* it hits. Some crisis threaten infrastructure, personal possessions, values in society, or the health and safety of people (Boin et al., 2017, p. 7). Most of the time, such events are categorised as disasters or complex emergencies, as they are incidents of known unknowns that can be prepared for. However, the latter example, a threat to the health and safety of people, has the potential to become a crisis of unknown unknowns, as it is in the case of an epidemic or pandemic.

An additional aspect that presents itself when analysing the crisis management in Norway, is *where* a crisis hits. Whether a crisis is limited to a region or municipality, or the nation as whole, different approaches apply. Effectiveness and available resources in the different municipalities, and the size of the threat, can affect whether intervention from other municipalities, the county, or state, is required. The terrorist attack on Oslo and Utøya in 2011 revealed why good communication and rapid responses across local borders is vital during a crisis. The Commission tasked to evaluate the sequence of events found that, while there was enough resources available, first responders and specialised actors were not able to ‘find each other’, nor did they accept help from other police districts (Fimreite, Lango, Lægreid, & Rykkja, 2013, p. 849; NOU 2012: 14, 2012; Wernersen, Brekke, & Alstadsæter, 2012; Zondag et al., 2012). The principle of proximity in Norwegian crisis management also plays an important role in how and by whom, a crisis is managed.

As pointed out earlier, when faced with a crisis, uncertainty can take the form of known unknowns or unknown unknowns. Similarly, uncertainty can also be viewed as ‘wicked problems’ or ‘wicked issues’. Head and Alford (2013) defines wicked problems as problems without an optimal solution, which can contribute to the difficulty surrounding coordinating efforts made by government agencies. This could be due to the size of the problem, the overwhelming complexity of the situation, or an unclear understanding of possible solutions (Lægreid & Rykkja, 2015). It can be difficult for different actors to agree upon a specific solution when faced with a wicked issue, though it is possible to come up with a provisory alternative for action, a partial solution, or a ‘quick fix’. Political processes and organisational structures can further complicate the shared understanding of an event, and subsequently, available paths for action.

The ‘wickedness’ of wicked problems can, according to Head and Alford (2013, p. 718), be defined by three different categories – uncertainty, complexity, and diversity – that

affects the possible ways in which an actor can respond appropriately when faced with a wicked issue. It is important to note that the goal should not always be to solve wicked issues, as that could prove to be an impossible task. In such cases, helping actors negotiate and reach a shared understanding of the problem, or an agreement on the path ahead, can result in solving parts of the problem. In the case of a pandemic, ‘solving the problem’ does not always entail eradicating the disease, but rather gain control of the situation through measures like quarantine or isolation, and reduce the risk it poses on the population, by for instance providing vaccines, and appropriate medical attention to the infected.

Problems faced in the social sciences distinguishes themselves from the problems faced by the natural sciences, as social problems usually are inherently wicked. “The objective of the work is coherent action, not final solution” (Head & Alford, 2013, p. 718), which often is the case in natural sciences where one can have a clear mission and a definitive answer on whether a problem has been solved or not (Rittel & Webber, 1973, p. 160). The aim for public policy issues should be to seek a resolution by improving coordination and collaboration among organisations, actors, or agencies so that governments become more equipped too face complex challenges and find a way forward (Head & Alford, 2013; Lægreid & Rykkja, 2015; Rittel & Webber, 1973). Rittel & Webber (1973) distinguishes between ten properties of wicked problems, to further show the complexity and ambiguity of such problems, and how that separates them from what they refer to as “tame” problems.

In crisis management, wicked issues present themselves despite of the work the government put into risk assessment and preparedness planning for extraordinary events. Both known unknowns and unknown unknowns in a crisis are inherently wicked, as it is impossible to determine the course of events or to know whether the problem was solved or not. Such situations can stretch across administrative levels, policy sectors, and ministerial responsibilities (Lægreid & Rykkja, 2015, p. 484). Without a coordination strategy in place before an incident occur, coordination efforts across policy areas can prove to be a challenging exercise. Even with a coordination strategy in place, it may turn out to be insufficient or less relevant to the specific problem at hand during a crisis. Organisational flexibility and improvisation is also a key aspect in collaboration efforts to manage wicked issues, but this is often further complicated by internalised norms, values, or symbols within the different organisations.

3.3 CRISIS MANAGEMENT

In addition to different ways of relating the history of pandemics to crisis management, it would be fruitful to use a perspective on pandemics that focus on how to manage crises. Crisis have become inherently more transboundary in recent years, like the 2009 H1N1 pandemic and the SARS epidemic, terrorist attacks, or environmental crisis like the BP oil spill, or man-made climate changes (Ansell et al., 2010). This has created a need for better collaboration between nation states, as it has become increasingly more difficult to handle these events alone (Blondin & Boin, 2020). However, even with international collaboration and coordination, different nations still chose their own path of response (Baekkeskov, 2016). The WHO have facilitated pandemic preparedness since 1997, yet in the case of the 2009 H1N1 pandemic, the response of different countries varied greatly, i.e. some countries were more successful in their management strategies than others. Routine incidents are easier to manage than ‘black swans’ (Blondin & Boin, 2020, p. 3; Boin et al., 2017, p. 26), which are unknown crisis that are almost impossible to plan and prepare for – like a pandemic or financial crisis.

One of the key coordination challenges leaders face in crisis management is safeguarding and facilitating collaboration across different organisations and actors (Boin & 't Hart, 2012, p. 179). In the early stages of a crisis, decisions made *ad hoc* adhere to guidelines stated in the preparedness plans, which inhibit the possibility for leaders to micromanage and control critical decisions. The decisions that prove themselves critical in shaping the course of the crisis, would therefore only be visible in hindsight. Emergency and first responses to large-scale events initially follow a bottom-up strategy, while it would later be managed and planned in a top-down structure. A well organised and managed crisis response can increase the popularity of leaders – while bad management might end political careers (See Boin & 't Hart, 2003).

Boin et al. (2017, p. 15) introduce “the five critical tasks of strategic crisis leadership” where they attempt to provide an overview of the different stages of a crisis, and how leaders can work during a crises situation in order to effectively manage it. The first stage is ‘sense making’, where information is collected and processed in order to detect the emergence of a crisis, and determine the significance of the possible threat. Second, ‘decision making and coordination’, where a response is formulated and decisions implemented. Third, ‘meaning making’, where the situation is framed in order to make it more convincing and helpful to the responders. Fourth is ‘accounting’, where decisions and actions made to manage and prevent the crisis are explained. Lastly, ‘learning’, where an evaluation-process is instigated on the

cause of the crisis and the responses to it. These five tasks are intended as a suggestion to leaders on how to manage known unknowns, and not unknown unknowns, as these have proven to be impossible to properly prepare for.

Still, can preparedness planning be described as a meaningful endeavour? Does it actually solve crises? Sadly, previous research on crisis management have shown that there usually is a big gap between what was planned for, and the actual crisis (Quarantelli, 1988, p. 374). One reason for this might be that the planning was poor to begin with, and that it was too specific rather than general, making it so that it was not applicable to the crisis at hand, and therefore trying to solve problems that did not exist – and maybe creating new problems in the process. Another reason might be a failure to recognise the difference between a complex emergency and a true crisis. Studies on previous disasters have shown that these two are not always distinguished in the preparedness planning activities, which can have dire consequences should a crisis occur. There could be an assumption that the preparedness plan could simply be implemented once the threat manifested itself, in order to manage the situation. Such a response might be appropriate in the face of a complex emergency, but it would be a catastrophic response to a large-scale crisis (Boin, 2008, p. 46).

When the crisis occur, it can be managed with either a top-down or bottom-up approach (Boin & Bynander, 2015), with horizontal or vertical coordination, or by following local principles and core values. At its core, crisis management should be as close to everyday governance as possible, but with an increased collaboration and flexibility between organisations. However, paradoxically, the complexity of modern organisations have made it harder for organisations to detect impending crises (Boin et al., 2017, pp. 43-44). Incidents – that in hindsight appear to be large, red, warning lights – reveals signs that should have alerted the government of what to come. Small interactions or events that fall between organisations and are left unchecked, can grow into a critical events. The failure to become aware of an unfolding situation also inhibits data collection in the earliest stages, making it impossible to implement preliminary actions to avert the crisis in the first place.

For a crisis to be managed in an acceptable manner, there is three dimensions that need to be fulfilled: communication and information, psychology, and organisation (Boin, Kofman-Bos, & Overdijk, 2004, p. 380). Time after time, it is evident that the crisis managers did not have the appropriate information available. Having a centralised, small team of decision makers further complicates the issue, as they are far away from the threatening event, making it harder to make rapid decisions on location. Crisis managers are also prone to the

psychological effects of decision making (see Comfort, Oh, Ertan, & Scheinert, 2012), like ‘group think’ or heightened stress. Even though crisis simulations and training exercises can be utilised in reoccurring incidents or complex situations, this is not the case in an extreme event, or unknown unknowns.

When discussing crisis management in public institutions and between organisations, *how* coordination efforts are conducted and organised, can prove useful – especially if the crisis is of a national concern. A distinction can be made between horizontal and vertical coordination, where the former is cross-sectoral coordination efforts, often between hierarchically similar organisations, and the latter usually is coordination efforts that takes place between local and national government. In this context, coordination– whether it be of something or someone – entails incorporating or integrating different parts of an organisation, in order to achieve a specific set of collective tasks (Van De Ven, Delbecq, & Koenig, 1976). Crises can also cross political and organisational boundaries, both vertically and horizontally. In the vertical dimension, local government can request assistance from a higher level of government, should the crisis become overwhelming or un-manageable. Two organisations can also collaborate horizontally if they operate at the same level of government, like two municipalities or counties. Both horizontal and vertical coordination can be applicable to international collaboration; in the case of a pandemic, it would be common for the national government to reach out to supranational organs like the WHO, and for the HDIR and the Norwegian institute of public health (NIPH) to collect data from similar organisations in other nations. When both horizontal and vertical coordination is required, crisis management is expected to be more challenging (Ansell et al., 2010, p. 196), as there are several communication channels conveying different messages and calls for action.

Division of labour and specialisation has become a key feature in modern organisations, which makes coordinating efforts challenging, and at times, problematic (Lægreid & Rykkja, 2015, p. 487). An example of this is policy fields falling between two or more jurisdictional boundaries, making it hard to establish responsibility. Nevertheless, well-defined organisational boundaries between horizontal and vertical coordination should not be viewed as an outdated mind-set. Horizontal coordinating efforts can be valuable in several situations, but it is a resource and time-consuming activity, which can make it a less desirable option. Public organisations, which oftentimes work “top-down”, face the problem of “siloesation” (Lægreid & Rykkja, 2015, p. 476), which makes problems that cross through traditional responsibilities more difficult to solve, especially in transboundary challenges.

Vertical coordination, when it is the subject of siloisation, makes horizontal coordination more challenging.

Both vertical and horizontal coordination brings with it some degree of wicked issues, despite the fact that this method of organisation also has contributed to reducing the overall ‘wickedness’ in the political fields. Vertical and horizontal coordination becomes a wicked issue when the coordination efforts fall between policy fields or jurisdictions between two or more actors, making them the responsibility of no one (Lægreid & Rykkja, 2015, p. 487). Nevertheless, how challenges connected to these models of coordination are approached, can become a central aspect of the management of wicked issues, particularly if a lead agency model, elements of voluntarism, and the formalisation of structures is used. According to Lægreid and Rykkja (2015, p. 487), an effective coordination effort can solve wicked issues in three ways; by increasing the understanding of the problem and its underlying causes, which increase the probability of finding a solution, and makes it easier to implement solutions. Coordination and collaboration thus becomes a way to understand the complexity, ambiguity, and uncertainty of transboundary wicked issues, which involves cross-sectoral actors and levels of governance (Lægreid & Rykkja, 2015, p. 487). In order to reduce the wickedness of horizontal and vertical coordination in a crisis, the Norwegian crisis management also involves four principles of which actors have to adhere to in crises. These principles will be referred to as ‘contextual principles’, and are included in the National Health Preparedness Plan (NHPP) (Helse- og Omsorgsdepartementet, 2018b). The contextual principles are guiding principles in all areas of crisis management and preparedness planning, not just on issues regarding health and care strategies, but also in all sectors and areas of crisis management and societal security.

The principle of *liability* states that actors in charge of a specific service or policy field have the responsibility to ensure the necessary preparedness and management strategies in the case of an extraordinary event, and is established by law in the Act on Health and Social Preparedness (HSP) (Helseberedskapsloven, 2000, § 2-1). The principle of *proximity* – otherwise known as the *subsidiary principle* – states that a crisis should be managed at the lowest possible governance level, while the principle of *conformity* is to ensure that organisations established during a crisis, should operate as closely as possible to those that operate on a day-to-day basis. Lastly, the principle of *collaboration* states that all organisations has the independent responsibility to ensure the best possible collaboration with relevant actors in prevention efforts, preparedness work, and crisis management (Helse- og

Omsorgsdepartementet, 2018b, p. 5; 2019, p. 11; Justis- og beredskapsdepartementet). The principle of liability, proximity, and conformity was first introduced in modern preparedness strategies after the ‘St.meld. nr. 17 (2001-2002) (p. 4)’ – which is based on findings from the 1999 “Willoch Committee” and the subsequent official Norwegian report NOU 2000: 24 (2000), in addition to the NOU 2001:31 (2001) – that came after the 9/11 2001 terrorist attack in the USA. The last principle – the principle of collaboration – was introduced in the white paper Meld. St. 29 (2011–2012) (p. 39) (Meld. St. 13 (2015–2016), p. 6) and came as a response to the insufficient and highly criticised collaboration efforts in the 22nd July 2011 terrorist attack.

Still, some of these principles have been included in Norwegian crisis management strategies for several decades, where some, like the principle of proximity, originates from the PHA of 1860. These four principles are connected to one of the core values of the Norwegian governance model, which is that of *autonomous municipalities*.

The principle of self-governing and local democracy is important in all aspects of the Norwegian governance model, but also in the early stages of a crisis, as it can provide an enhanced sense of responsibility due to the proximity of the crisis. The municipal reform of 1992 aimed at counteracting centralisation and a strong ‘sectorisation’ from the Norwegian central government (Lango, Rykkja, & Læg Reid, 2011, p. 171), where the main purpose was to strengthen the municipalities and the local autonomy of local government, whilst reducing a strong sectorisation and centralisation. The concept of self-government is a central feature of Norwegian policy, as local authority, governance, and democracy are relatively strong societal values (Lango et al., 2011, p. 171), which is strongly connected to the core values of the 1860 PHA. Policy that reduce the autonomy of local government is highly contested in the population, which was demonstrated during the debates surrounding the new Municipality reform of 2014.

Another core value in the central Norwegian governance model is *the ministerial responsibility*. This means that the head of a given Ministry has the overarching responsibility of everything that takes place within his or her Ministry, in addition to all associated directorates, agencies, and the various government branches related to the ministry in a vertical line (Lango et al., 2011, p. 171). This value is closely related to the principle of liability, especially in vertical coordination efforts. The consequences of a strong ministerial responsibility can result in strong sector-based ministries, and hence strengthen the vertical coordination. This, in turn, brings about weakening of the horizontal coordination between

policy areas, institutions, and sectors. The dominating principle in this area is in favour of a specialising within the sector, the purpose, or the task, which can make the coordination between traditional sectors challenging. Sector-based ministries have more authority than the ministries in charge of sector-crossing coordination, which could imply that the ministries operates as separate ‘silos’ with a limited opportunity to catch on to sector-crossing political questions (Justis- og beredskapsdepartementet, Helse- og omsorgsdepartementet, & Forsvarsdepartementet, 2016a, p. 5). Historically, the principle on proximity has been an important part of the Norwegian political system, where questions regarding crisis management and risk assessments are usually organised at a local level. In contrast to the principle on liability, the principle on proximity allows for the possibility to implement coordination efforts across different sectors on a lower level. This contributes to an increased horizontal coordination between different organisations. The principle on conformity could turn out to be particularly hard during extraordinary crisis, as the need for improvisation, supplements to existing organisations, and temporary organisations could grow and become crucial to the crisis management.

A common aspect in crisis management, especially with a (post-) NPM perspective, is that decentralisation can increase effectiveness and responsiveness in a crisis. Lower-level officials and first-responders are the first to make critical decisions on-sight in the beginning of a crisis, and when procedures are highly centralised, critical responses are slowed down. Centralisation in this case can be a liability to the management of the crisis, because a crisis never appear as envisioned or predicted. It may leave organisations and actors powerless or incapable of action, and path dependent organisation may see themselves locked-in or unable to respond. If one could predict a crisis, one can argue that it would not be a crisis in the first place. Boin et al. (2017, p. 60) argues that the prime source of problems in a crisis situation, is that centralised models respond to fast moving and distributed threats. Decentralisation is suggested as an “unavoidable necessity during a crisis response” (Boin et al., 2017, p. 60).

To successfully manage a crisis, decentralisation (Boin et al., 2017, p. 42) – also in addition to safety and awareness training – needs to be addressed in crisis response guidelines and preparedness plans. However, one of the unintended effects of decentralisation and other NPM techniques, is that it provides regulators and policymakers protection in case of failure in their crisis management (Boin et al., 2017, p. 118).

Christensen & Lægreids’ (2011, p. 126) differentiation between NPM and post-NPM reforms, are that “NPM reforms are chiefly about structural devolution, horizontal

specialization, market and management principles, and efficiency, while post-NPM reforms focus more on central capacity and control, coordination within and between sectors, and value-based management”. One of the issues facing NPM-oriented reforms and features, is that they have issues with events that transcend traditional ministerial areas or silos, administrative levels, and organisational boundaries (Lægreid & Rykkja, 2015, pp. 475-476)

3.4 EXPECTATIONS

The theoretical framework for this thesis is based on two different elements that are present in the preparedness and crisis management, namely path dependency and crisis management. This is all to be understood within the framework of crisis typologies.

The first sub-chapter starts by facilitating for including path dependency in our analysis, as it will become possible to point out how previous events have partaken in creating the overall pandemic preparedness. Different paths that form strategies and measures become trapped in self-reinforcing, positive feedback loops where options for future action becomes increasingly restricted. Both the general preparedness and the pandemic preparedness follow the same framework for preparedness, which has been developed over several years. Evaluations and learning points from previous crisis, disasters, or complex emergencies have influenced the direction of the overall preparedness strategies, as they have reached critical junctures, and as a result, have contributed to creating possible lock-ins’ of the crisis management.

The second sub-chapter on crisis typologies is important in order to establish a common understanding of the phenomena or event that is being prepared for. It also serves a purpose if the ambition is to explore collaboration and coordination between different actors and organisations, as it is important that everyone involved have a clear perception and understanding of the event. Creating an understanding of what constitutes as a crisis, would also be useful going forward.

As the research question is “how have previous large-scale pandemic or epidemic outbreaks contributed to shaping the current crisis management and pandemic preparedness plans in Norway?”, the three theoretical points would serve as an explanatory theoretical framework for further analysis. In order to analyse how previous events have shaped current strategies, a path dependent approach is required. Additionally, since I am interested in how this has affected the crisis management and preparedness strategies in Norway, a need to

understand what crisis management is becomes decisive in order to conduct a thorough analysis. Information of what constitutes a crisis, and which aspects this understanding provides, would therefore be required.

The third sub-chapter on crisis management demonstrates that crisis can be hard to manage and prepare for, especially when encountering a crisis of “unknown unknowns”. However, complex emergencies or other critical events that happen somewhat regularly and that can be prepared for, is possible to manage. In the case of pandemics, even though several types of pandemic pathogens have been encountered in the past, and hopefully, provided various learning experiences, it remains impossible to predict how the next pandemic is going to present itself in the future. Norway has four principles that guide actors on their responsibility, which is that of liability, proximity, conformity, and collaboration. These principles are expected to be prominent in all preparedness plans and strategies. However, how these principles guide coordination and collaborative efforts during a pandemic outbreak might not be sufficient on this specific area. The overall Norwegian preparedness strategies are, for the most part, a general strategy that do not separate between different types of crisis or complex emergencies.

Since the 22nd July 2011 terrorist attack in Norway, several efforts have been implemented on the field of preparedness and societal security, as the attack uncovered poor management strategies, lacking cross-sectoral coordination, and coordination efforts within organisations. The solution to these challenges was to increase centralisation across Norway, favouring bigger response units instead of smaller, geographically dispersed units. These changes have also affected the pandemic preparedness, as the number of municipalities and counties have been reduced, and these new organisations are required to create new RoS-analyses⁶ which might be a time consuming effort that takes months or years to fully complete.

⁶ Municipalities and counties are tasked to develop a comprehensive risk-and vulnerability analysis (ROS) to map-out undesirable events that might affect them, the occurrence probability, and the effects it might have on society (Helse- og omsorgsdepartementet, 2014a, p. 12)

4. METHOD AND DATA COLLECTION

4.1 PROCESS-TRACING CASE STUDY

The purpose of this thesis is to examine how previous large-scale pandemic or epidemic outbreaks have shaped the current crisis management and pandemic preparedness plans in Norway. The historical context in which these plans were developed would also be intriguing for further examination, which suggest that using a process-tracing case study would be a useful part of the data collection process and analysis.

Table 1 presents an overview of the five preparedness plans used in this thesis, as well as the current edition and year of publication. From this, it is possible to observe that the plans have all been either updated or implemented by the current government, which is headed by the Conservative Party.

Table 1 Overview of the preparedness plans included for analysis in this thesis.

Preparedness Plan	Year	(Latest) edition	Produced by	Number of pages
NHPP	2018	3 rd .ed	HOD	47
CBRNE	2016	1 st .ed	HOD, JBD, MD	14
OSID	2019	1 st .ed	HOD	52
PPI	2014	4 th .ed	HOD	90
AKS	2019	4 th .ed ⁷	DSB	228

In order to establish that the pandemic preparedness in Norway is based on experiences from previous crisis or pandemic events, the first step would be to examine the content of the five plans, in order to establish how the management of pandemic outbreaks is shaped. The aim is not to compare measures in the different plans, as they are closely connected within a preparedness framework for the health and care sector, and cover different aspects of a pandemic crisis. As a result, it is feasible to assert that this case takes place within the boundaries of single case study, as there are no comparisons between this and other cases, which makes it a single-case study and not a comparative case study.

⁷ It is the fourth annually collection of reports since 2012, that is considered to be similar to its predecessors. Reports have been published in various formats since 2005.

Yin presents a twofold definition of a case study (2018, p. 15), where the first being as an empirical method that “investigates a contemporary phenomenon (the “case”) in depth and within its real-world context, especially when the boundaries between phenomenon and context may not be clearly evident”. This definition sets the scope of the study, but its features would still need to be included. Yin calls for this need because it is not always possible to distinguish between context and phenomenon in real-world situations. The “how” formulation of the research question would also point towards the need for a case study in order to discuss the research question (Bukve, 2016, p. 139; Yin, 2018, p. 9).

Collier (2010, p. 2) defines the purpose or process tracing as a method that “[...] examines diagnostic pieces of evidence—often understood as part of a temporal sequence of events or phenomena—with the goal of achieving and refining causal inference.” This would result in either the overturning or the support of the research question or hypothesis, which is one of the central tools in qualitative research. Further, Collier summarises process tracing into four empirical tests, which are based on two criteria: if the test is *necessary* and whether it is *sufficient* in order to establish a causal relation. The four empirical tests evaluate the evidence in specific ways, but should not be regarded as rigid tests, but rather as heuristic guidelines for evaluation. Collier (2010, pp. 5-7) refer to the four tests as ‘Straw-in-the-wind tests, hoop tests, smoking gun tests, and double-decisive tests’.

The straw-in-the-wind test tests the plausibility, or raises doubts about any given research question, but it is not a decisive criterion on its own. Even though the test may be consistent with the research question, it cannot confirm it. Additionally, it provides no sufficient or necessary criteria in the support or rejection of a research question. Consequently, it is the weakest of the four tests, as it have no effect on rival research questions or hypothesis. The second test, the *hoop test*, is more demanding. It cannot prove support for the research question, but it can discard it. It does not provide a sufficient criterion for the acceptance of an explanation, but it does establish a necessary criteria. Similar to the first test, the hoop test have no ramification for rival research questions. The third test, the *smoking gun test*, could firmly support one research question, but a failure to pass the test would not imply rejection. It provides a sufficient, however not necessary, criteria for affirmation. Similar to the two former tests, it has no significance in regards to rival research questions. The final test, *the double-decisive test*, is the strongest of the four tests. Here, it is possible to confirm a research question, and hence, eliminate every other hypothesis or research questions. The test can be combined with the three other tests in order to strengthen

the certainty in the result. However, the researcher must be able to find and identify every other rival research questions or hypothesis in order to do so.

For this thesis, the research question addresses whether previous pandemics have affected the current preparedness plans and crisis management. Our first clue is that several of the preparedness plans, NOU's, white papers, and reports written in the years after the 2009 H1N1 pandemic reference the pandemic as a reason for the need of an increased preparedness. Or second clue is that the preparedness in several plans were updated in the time after the 2009 pandemic, in addition to that new preparedness plans and legislations were implemented after the pandemic. However, the reason for the updates and implementation of these preparedness plans could have been because of other, non-related events such as the terrorist attack on the 22nd July 2011, natural disasters such as the volcanic eruption on Iceland in 2010, the nuclear disaster in Japan in March 2011, or that the plans simply needed a revision due to their age. If the double-decisive test was to be passed, it would need to rival all other possible explanations in order to determine whether previous pandemics was the sole event responsible for shaping new or existing crisis management strategies or preparedness plans. In the case of this case study, it would not be decisive to pass this final test, as the research question and theme of the thesis acknowledges the possibility that other events could have influenced the pandemic preparedness.

The process-tracing strategy guided the selection of the pandemic preparedness plans, where the selection of one plan directed the attention to another plan. Tracing the different processes was possible through an extensive review of the all the preparedness plans related to the topic, white papers, government hearings, and various informational pamphlets and reports. Most of the plans would either call for the creation of new plans, or reference to preceding plans, as a part of their own preparedness. Likewise, it was possible to track the informational path through the government hearings, white papers, and NOUs commonly found after the evaluation process of a crisis, e.g. the St.meld. nr. 37 (2004-2005) on the tsunami disaster in Central Asia, which would bring about a new wave of crisis management in Norway, including the creation of the Health Preparedness Plan in 2004. After the 2009 H1N1 pandemic, it was discovered that the preparedness planning for pandemic influenza was insufficient, and consequently, the 'National Preparedness Plan for Pandemic Influenza' was updated in 2014. Later, with the 22nd July 2011 terrorist attack, the NOU 2012: 14 (2012) report from the 22nd July Commission (Gjørsv-kommisjonen), which was emphasised in the creation of the Meld. St. 21 (2012–2013) on the management of a terrorist attack and societal

security, would bring about changes to the Norwegian framework for preparedness. The terrorist attack had increased the fear of the possibility that biological weapons could be used in future terrorist attacks, or as a means of warfare. Following, it led to the call for the implementation of a National Strategy for CBRNE-Preparedness in 2016. The follow-up of the CBRNE plan would later result in the National Emergency Preparation Plan against Outbreaks of Severe Infectious Diseases (OSID) in 2019.

The report NOU 2021: 6 (2021) that discusses the governments' management of the Covid-19 crisis, will most likely influence a new white paper on societal security, which would consequently be built on experiences from the Meld. St. 5 (2020–2021) that was adapted during the beginning of the Covid-19 pandemic. Before this white paper, Meld. St. 10 (2016–2017)⁸ on societal security, was included in The National Health Preparedness Plan of 2018, where it states the basis for systematic quality improvements in societal security and crisis management (Helse- og Omsorgsdepartementet, 2018b, pp. 10,12). A new white paper on the evaluation of the measures and strategies implemented during the covid-19 pandemic, in addition to more comprehensive risk-analyses that consider other communicable diseases when estimating the risk of new pandemics, might similarly be influencing future updates to the NHPP.

As the goal is to understand how previous encounters with pandemics have shaped the current crisis management and preparedness in Norway, the case design would also need to factor in a historical perspective; mentioning impactful events that have affected the preparedness strategies, similarly as the previously presented examples of the different processes. It would also require pre-existing theory as a basis for analysis, as it would aid in the explanation on how preparedness plans and crisis management strategies came to be. Nonetheless, what sets this analysis apart from a purely historical analysis, though sharing similar techniques, is that it is possible to interview and collect information from people that have observed or experienced these impactful events (Yin, 2018, p. 12). Therefore, an analytical tool that would be able to trace the different processes over time, would be required. This resulted in the selection of a process-tracing case study – also known as an explanation-building case study (Yin, 2018, p. 179) – or more precise, a result-explanatory process-tracing case study.

⁸ White Papers preceding the Meld. St. 10 (2016-2017) on societal security: Meld. St. 16 (2012-2013), Meld. St. 29 (2011-2012), St.Meld. nr. 22 (2007-2008), St.Meld. nr. 17 (2001-2002)

Bukve (2016, p. 140) points to two types of process-tracing analysis that can be used, depending on the goals of the researcher: a theory developing process-analysis or a result-explanatory process analysis. The former aims at developing new theories or hypothesis through testing, while the latter draws on interchangeable explanations that the researcher deem relevant in order to explain an incident. Collier (2011, p. 823) defines process tracing as a “fundamental tool of qualitative analysis [that] can contribute decisively both to describing political and social phenomena and to evaluating causal claims”. Even though Yin (2018, p. 45) points out that “how” case studies are usually descriptive, and not explanatory like many “why” case studies. The purpose of this thesis is to explain how a previous event have shaped a current plan, not merely point out how it came to be. Swanborn (2010, p. 116) describes explanation building as a “special form of pattern matching”, and Bukve (2016, p. 140) points to the need to examine the underlying events and processes that led to the particular incident, by either reconstructing the decision making process or identifying the triggering causes that led to the chain of events. In this case, the final ‘incident’ would be defined as the finished preparedness plan.

Under ‘*normal*’ circumstances, it would be impossible to properly test in what way previous pandemics could have influenced the current crisis management and pandemic preparedness, though it could have provided some insight through the evaluation of training events or other forms of learning and preparedness exercises. Such events are usually limited to ‘known unknowns’, as described in chapter 3, since it is impossible to properly prepare for ‘unknown unknowns’. Throughout the duration of writing of this thesis, the effects of the Covid-19 pandemic have been experienced and felt, which has made it possible to test the Norwegian preparedness and crisis management against the implemented measures as they were implemented. Additionally, path dependent decisions could become apparent in the initial measures implemented at the beginning of the pandemic, which could be influencing the strategies available at the beginning of the summer of 2021, a year after the pandemic shut down societies across the world. Nevertheless, as the Covid-19 pandemic is an ongoing crisis, this approach would still need to rely on too little information, as the uncertainty and ambiguity surrounding the decision making process is still being analysed by the Corona Commission, which at this point, could limit the amount of publicly available information. As the evaluation process has not yet been finalised, and the pandemic evaluation remains complex and unclear, the accessibility and quality of available data to base such an analysis on, remains doubtful.

Consequently, the choice of analysing ‘*how*’ preparedness plans and the Norwegian crisis management was organised and structured prior to the Covid-19 pandemic, would be more fruitful in order to create a groundwork for why certain decisions were made at the early onset of the crisis. In turn, this analysis could provide future researchers with an explanation for ‘*why*’ particular measures – based on their historic preconditions – were implemented. A result-explanatory process-tracing approach would therefore provide more useful in the analysis of the five preparedness plans in the following chapter, as it could prove useful for future research on the Norwegian crisis management, after the Covid-19 crisis has ended.

4.2 DATA AVAILABILITY AND SELECTION

Similar to the choice of method, the selection of documents were guided by the research question. The choice to solely rely on documents as part of the analysis was made because it would have been the most widely available and accessible information at the beginning of the Covid-19 pandemic – or of any pandemic scenarios – that could provide different actors and organisations with similar information and measures in the initial phase of the pandemic. If the information in the pandemic preparedness plans were outdated or insufficient, or too specific or too general, the Norwegian crisis management would be severely compromised. How these documents came to be, then, would prove to be essential for future preparedness planning and crisis management. As the first evaluation from the Corona Commission on the Covid-19 pandemic have shown, the preparedness in advance was insufficient in order to manage or prepare for this type of pandemic crisis (NOU 2021: 6, 2021, p. 63) as most scenarios only tackled influenza pandemics.

Where the preparedness plans have been collected from, is a vital part of the source evaluation. I have selected the most recent editions of these documents that could be found on pandemic preparedness and crisis management in the health and care sector in Norway, which could also be analysed by using a social scientific qualitative method. Additionally, previous editions of the plans have been included in the research in order to guide the creation of historic lines in the preparedness, but they have not been analysed in this thesis. Plans that tackled registration, tracking, vaccination strategies, and early detection systems of pandemics were not included, similar as plans that strictly tackled how to recognise particular diseases or international collaboration. The plans are the final, published version of the plans, and not drafts. White papers, subsequent reports, and documents that have called for the creation of these plans, have passed in the Storting after being voted on. After this process, the work of

creating the preparedness plans have been the tasked to the Regjering, which have published the official preparedness strategies on their websites, www.government.no. The plans are written by institutional sources, meaning that they have been written in collaboration with several authors, within a sector or in a collaborative cross-sectoral effort. The preparedness plans originates from government white papers, NOU's, and reports, which pointed to a need for updated preparedness strategies.

Plans made on a municipal or county level were not included, as this thesis seeks to explore the plans that were applicable for the entire country. The Ministry of Health and Care Services (HOD) have written or co-authored four out of the five preparedness plans chosen for further analysis, and the last document is a report on the most recent risk assessment and analysis by The Norwegian Directorate for Civil Protection (DSB). The reason why this report was included instead of an actual preparedness plan is that no other relevant plan that took a general focus on pandemic preparedness could be found, nor where they referenced to in the NHPP. However, the Crisis Scenario Analysis of 2019 (AKS) is referenced as an analysis on which all organisations should base their preparedness and crisis management (Helse- og Omsorgsdepartementet, 2018b, p. 11). These five documents will be referred to as preparedness plans.

The data and collected information used in this thesis is collected from two types of sources, the political sources and other types of sources. The political sources consist of white papers, NOUs government documents, and reports ordered by public organisations. The other type of sources are collected from public sources, such as publicly available websites, historical research and publications, news articles, or articles published by independent organisations and actors. All preparedness plans analysed in the following chapter is retrieved from public government websites. The support for claiming a high level of trustworthiness of the sources and the contextual assessments of the preparedness plans would therefore be prominent (see: Grønmo, 2016, pp. 177-178), which in turn would strengthen the reliability of this thesis. Further assessments on the quality of the research design and data collection process will be presented in sub-chapter 4.4 on data quality.

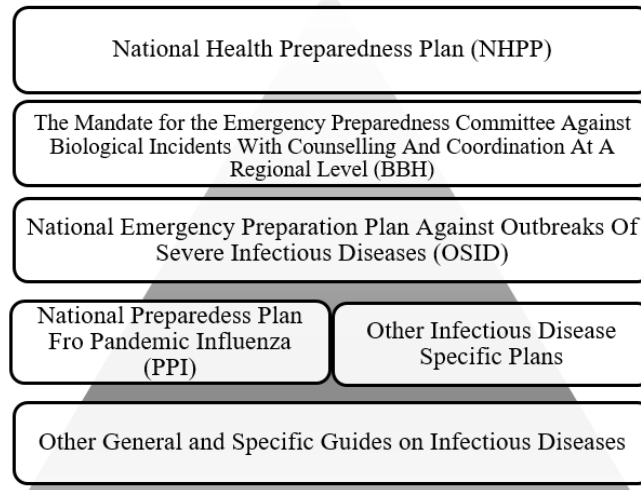


Figure 3 The preparedness plans are ranked hierarchically, and establish a level of authority between the plans. The figure is influenced by the figure provided by HOD (Helse- og omsorgsdepartementet, 2019, p. 5)

By using a process-tracing strategy, documents were selected after a read-through of all preparedness plans that could be of interest for this thesis. The starting point was the NHPP as it presents the overall framework for crisis management in the Norwegian health and care sector (see Figure 3). The NHPP pointed in the direction of white papers, NOU's, and other preparedness plans. In turn, these documents would lead to the discovery of other plans. In the end, a decision was made to go forward with the selected five plans, due to their connections to one another, their relevancy, context, and content, in order to be able to discuss the research question (see: Grønmo, 2016, pp. 175-177). Additionally, either a Ministry or a Directorate wrote the plans, which would increase the plans relevancy in a crisis scenario, and in the overall crisis management framework. The number of preparedness plans were limited to five, as it became apparent that a small selection was necessary in order to examine why and how the plans was created, in contrast to including a larger sample of plans which could have produced a weaker analysis of the preparedness and crisis management. Only choosing one preparedness plan for this study would also prove to be an impossible task, as several of the preparedness plans are based on, or called for, in previous plans, which connects them to the overall framework (see: Grønmo, 2016, pp. 125-126). The selected plans are introduced in the section below, and their connections to other plans will be presented in the next chapter.

The *National Health Preparedness Plan* (NHPP) was included due to it being the overall framework for preparedness and crisis management in Norway. It describes the roles of actors within the sector, fundamental mechanisms for coordination, collaboration, and

detection and response strategies (Helsedirektoratet, 2019a, p. 34). All other preparedness plans are grounded in this framework. The *National Strategy for CBRNE-Preparedness* (CBRNE) was created to aid in the crisis management of “unknown unknowns”. The plan is intended as a cross-sectoral plan for collaboration between the JBD, HOD, and the MD, where each ministry is in charge of different events. The *National Emergency Preparation Plan against Outbreaks of Severe Infectious Diseases (OSID)* is a follow-up plan of the CBRNE-strategy, in order to further the preparedness against biological agents. *The National Preparedness Plan for Pandemic Influenza (PPI)* is the only preparedness plan that specifically deal with the management of a pandemic influenza in detail. It is mentioned in Meld. St. 16 (2012–2013) (p. 44) that, in addition to the general crisis management, some scenarios are too complex and demanding for them to be handled within the competencies of ‘regular’ crisis management. To improve crisis management in a pandemic scenario, the PPI was developed as a specialised preparedness plan for the Health and Care sector. The *Crisis scenario analysis of 2019 (AKS)* is not a preparedness plan, but a report that describes the *status quo* of the preparedness at the end of 2019. It estimates that a pandemic is the most likely scenario to occur within the next 100 years that would also have the most severe consequences. This scenario was also included in the 2014 edition of the report (Direktorat for Samfunnssikkerhet og Beredskap, 2014b, pp. 69, 201, 2013).

Interviews were not included as a process of data collection, as the documents and information required was publicly available. In a process-tracing study such as this, it is possible to trace patterns through written sources, which in turn could provide a better overview of the processes. The data collection took form from following a process tracing process, where the collection started with one document, which made it possible to find a connection with another document, white paper, or NOU’s. The data collection process was decisive for the choice of method, and it was no need to conduct interviews in order to find additional information, as the process tracing led to the required documents. However, interviews could have been conducted as an empirical data collection method in this study, but there is a chance that the thesis would have taken a different direction than first intended. The informants could have pointed in the direction of supplementary information, similarly in the document analysis, but it could also have altered the theme of the thesis, as various information was presented.

4.3 QUALITATIVE DOCUMENT ANALYSIS

The empiric was collected by using a systematic analysis of relevant documents. One of the advantages with this method, is that the sources remain uninfluenced by the data collection process as texts are not altered when they are analysed (Grønmo, 2016, p. 180), nor do they provide situational influenced information. After a systematic review of the content of the selected preparedness plans – and other preparedness plans that were not included in this thesis –, a selection of information relevant to the theme and purpose of this thesis was chosen as the foundation for further analysis.

By conducting an analysis of a previously, little explored phenomena or relation, it can become necessary to utilise theories and definitions that have been used to examine and explain a similar phenomenon. Therefore, a theory-informed analytical framework need a certain flexibility in order to accommodate for findings that could lead the research in a new direction. Following this logic, the analytical framework of this thesis would need to extend as far out as the research question, and the purpose of the research, allows for. By using a *theoretic interpretation* as a goal for this thesis, the goal would not be to establish new theories or terms, but rather to analyse and give meaning to this particular case. Theories utilised in this thesis is used to interpret the data, and to put it into a larger context (Bukve, 2016, p. 88). Accordingly, an *interpretive reconstruction* would be best suited in order to collect the empirical material. Interpretive reconstruction starts with the data collection, for then to seek out theories and terms that provides the best interpretation and understanding of the data (Bukve, 2016, p. 88). This method of data collection would also further the result-explanatory process analysis, as it allows room for interpretation and contextual analyses.

In order to create better grounds for a comparison of the different preparedness plans, three questions that address different aspects of the research question was included. The first, *‘What were the main reason for the implementation or revision of the current Norwegian pandemic preparedness plans?’* explores and seeks to find an explanation for why there was a need for a new or revised preparedness plan. The second, *‘Is it possible to detect a path dependent decision making in the creation of the pandemic preparedness plans?’* aims to point out the historical aspects that may have guided the different decisions made in the preparedness plans, e.g. measures, coordination efforts, or the general content. The third, *‘How do the pandemic preparedness plans allow for autonomy or deviation from the established ‘paths’ of crisis management in order to solve an unforeseen event?’* seeks to determine the flexibility and room for manoeuver the different plans allow. As mentioned in

the previous chapter, flexibility and improvisation plays a major role in the management of a crisis. In addition, an analysis of the findings in these plans would also require us to view the preparedness plans in their context, and in their entirety. The three questions are included in order to create points of comparison between the preparedness plans.

4.4 DATA QUALITY

The collected data need to be able to answer or explain the study's research question, and depending on which questions the researcher seeks to explain, the quality of the data can vary greatly within one source, as the researcher selects and chooses the information that is most relevant for the research. Its suitability is dependent on a variety of conditions, which can be explored through *validity* and *reliability* assessments (Grønmo, 2016, pp. 240-242), which measures the quality of the research design (Yin, 2018, pp. 42-47)

The validity tests the quality of the empirical social research against the research question (Bordens & Abbott, 2014, pp. 111-117; Grønmo, 2016, pp. 241-243; Yin, 2018, pp. 42-47) and can be divided into two tests that create an overview of the internal and external validity. The validity tests examines how the data selection is discussed, if they are relevant for the research and provides a valid overview, and if they are the 'right' documents for the research. One can achieve high validity if the collected data result in empirics that is relevant to the research question, and the researchers' intentions for the case design. The data used in this thesis is based on a selection of five preparedness plans, and the intention behind using them is to establish whether they show signs of previous pandemic crisis in their suggested measures and management strategies.

As this thesis is an explanatory study based on the premise that historical events have contributed in creating path dependent preparedness plans and crisis management, internal validity becomes an important test (see: Yin, 2018, p. 45). Internal validity is "seeking to establish a causal relationship, whereby certain conditions are believed to lead to other conditions, as distinguished from spurious relationships" (Yin, 2018, p. 42) whilst being aware that causal relations could be interpreted as causal by the researcher, e.g. in cases where there might not be a causal relationship. Correlations could also come from other sources or factors not explored (Swanborn, 2010, p. 36). Therefore, an examination would need to be made on whether there is a connection between the theoretical models of this thesis, and the observational patterns and data – and if it is possible to come up with a theoretical model that

can explain the observed correlations (Bukve, 2016, p. 100). One of the prerequisite that need to be present in order to draw conclusions on causes and causal mechanisms, is that there is enough relevant data available (Collier, 2011, p. 825).

As the data collection in this thesis solely consists of document analysis, one of the challenges concerning the internal validity is that there is an interpretation of causality on issues that can be explained using different methods. The pandemic preparedness is also influenced by other crises, and the subsequent evaluation of the crisis management and pandemic preparedness – e.g. after the terrorist attack in Norway in 2011, or the 2004 Sumatra-Andaman earthquake – have made it necessary to include data on the most important events that have affected the Norwegian crisis management. Similar to the process tracing tests provided by Collier in point 4.1, incorrectly assuming that there is a relationship between previous pandemics events and contemporary pandemic preparedness plans, without knowing if any other non-pandemic events really caused the change to the preparedness plans, would weaken the internal validity of this thesis. I have sought to make no such assumptions, and I have been open for other explanations on how the current crisis management and pandemic preparedness came to be. In order to ensure that a conclusion would be able to account for these alternate explanations, four analytical tactics – pattern matching, explanation building, addressing rival explanations, and using logic models – are utilised in the following chapters to ensure that the research question and selected preparedness plans have a valid connection.

The selected documents fits within the research question and the theme of this thesis, as they all concern the Norwegian pandemic preparedness. They are selected from a larger sample of data in order to ensure that no important documents have been overlooked in the process. To ensure that the documents have not been viewed out of context, previous editions of the specific preparedness plans, if any, have been included as a historical context in the analysis. The plans that have been superseded by newer editions of the plan have not been analysed, but they have been used as part of the analysis in order to create a better understanding of the path dependent process.

In a case-study design, external validity is measured by whether the results are theoretically or strategically representative. External validity is “showing whether and how a case study’s findings can be generalised” (Yin, 2018, p. 42). It also express whether the results of an experiment is realistic and can be generalised to ordinary societal situations, so that the validity of the conclusion on casual relationships is not merely valid under constructed research conditions (Bukve, 2016, p. 100; Grønmo, 2016, p. 254).

It would be useful to examine whether the preparedness plans in the health and care sector are guided by the same principles as preparedness plans in other areas, for instance in the Defence sector as part of the external validity test. As mentioned in chapter 3, the Norwegian societal security is based on the principles of liability, proximity, conformity, and collaboration, but does the interpretation of these principles vary from one sector to another? Alternatively, is the observation a general understanding of what preparedness *is*, instead of a more sector-specific definition? Whether it would be possible to generalise the processes that led to the creation of the preparedness plans, or if it only applicable to this one case, would be an interesting aspect for further analysis. If the development of the pandemic preparedness plans and crisis management turns out to be unusual, while there being signs of generalizable patterns, the external validity of this thesis could be strengthened. However, it would prove to be a tiresome exercise to agree upon a common understanding of what is universally valid in social scientific studies, which weakens the potential for generalisation and makes the conclusion contextually conditioned.

In addition to the validity test, a reliability test would also need to be included in order to assess the quality of the collected data. To what degree can the data be trusted? Is it possible to repeat the data collection procedure and get the same results? Reliability speaks of the ‘trustworthiness’ of a study, with the objective to ensure that if a researchers were to conduct the study again, the researcher would arrive at similar conclusions or findings (Bordens & Abbott, 2014, p. 126; Bukve, 2016, p. 101; Grønmo, 2016, pp. 240-243; Swanborn, 2010, p. 36; Yin, 2018). Testing reliability in qualitative studies such as this, would usually prove to be an impossible task by using standardised test, though it could be made possible to establish an empirical foundation in order to assess reliability (Grønmo, 2016, pp. 248-249). A high level of reliability sets requirements for the process of selecting documents, and the subsequent interpretation of them. The data collection process has been carried out systematically in order for the study to be credible and reliable, in accordance with the assumptions and procedures that were established in the case design (Grønmo, 2016, p. 249). Since the thesis is based on publicly available data, and information on how it has been used is provided, it contributes to strengthen the reliability of this thesis. The documents have been analysed as they are, and it is possible for others to collect the documents, and analyse them in an equal manner and then get the same results.

4.5 ON THE METHODOLOGICAL CHOICES IN THIS THESIS

The selected preparedness plans are relevant to the research question, and the path dependent processes behind the creation and alterations of these plans becomes apparent when including previous editions of the documents. The documents are well suited to answer the research question, as well as the three sub-questions. In addition to solely relying on the content of these plans, it would be possible to supplement the data by sending a survey to the different directorates and ministries, in order to establish whether they know about the content of the plans, the importance of the plans, and whether they are relevant in the overall preparedness strategies. However, since the plans have extensively been used and referenced to during the last 12 months, it remains uncertain whether these plans were as visible or known before the beginning of 2020.

Additionally, other methodological choices could be used in this thesis, in order to create a different direction of the case study. Such choices could have affected the data collection process, and perhaps contributed to the desired, overall understanding of the theme and topic. Instead of choosing an explanatory process analysis, a decision could be made to follow a theory developing process analysis instead, which would have contributed to the theory development on the societal security area, that have not yet been properly established. however, I believe that this submission would prove itself useful for further research on the area of crisis management and preparedness, as it is combining two theories and perspectives that usually are not used together on this research area.

In process-tracing studies, careful descriptions are fundamental for the quality of the research, since it, at its core, analyses sequences and trajectories of causation and change. If the observed phenomena were not described adequately in each step of its path, the analysis would surely fail. Therefore, description becomes an important building block for studying processes (Collier, 2011, p. 823; Mahoney, 2010, pp. 125-131). Following, lacking descriptions could complicate the process tracing study, and the thesis would be less valid as a result. I have included all descriptions that were of interest to the research, but there is always a chance that my subjectivity or interpretation could have nudge this thesis in a specific direction. As a result, measures have been implemented in the data collection process and in the description of the plans to ensure a high level of objectivity in the analysis of the plans.

5. PREPARING FOR THE NEXT PANDEMIC

The precondition for all societies that successfully have been able to prevent spiking infection rates in its population, have been to plan and prepare for future infectious disease outbreaks. Both domestic and international infectious outbreaks have influenced the amendment, continuation, or drafting of the selected preparedness plans. The most notable pandemics and epidemics in recent times that have influenced the crisis management strategies in these plans are the Middle East Respiratory Syndrome (MERS), Severe Acute Respiratory Syndrome (SARS), the epidemic Ebola virus outbreaks, the epidemic Zika virus outbreak, and the 2009 H1N1 pandemic influenzas (Helse- og omsorgsdepartementet, 2019, p. 5). Additionally, experiences made from previous pandemics, such as the 1918/19 H1N1, 1957 A/H2N2, and the 1968 A/H3N2, have also contributed to shaping the management strategies in these five plans.

This chapter seeks to create an understanding of the underlying reasons for the creation of the preparedness plans, investigate the provided information in the different plans, in addition to the suggested strategies for managing infectious outbreaks. Following, all five pandemic preparedness plans involve strategies on preparedness and management in the case of an outbreak of infectious diseases. The examination will include information on the triggering factors that sparked a need for changes in the current plans – or the need to create new plans. Sources as white papers, NOU's, propositions, hearings, or government documents have been included in the research and examination of the preparedness plans, in order to further contribute to an analysis of the data, by using a the theories of path dependency and crisis management. This will allow us to observe, if any, emerging patterns of self-reinforcement in the area of societal security and preparedness.

Amendments to existing plans, alterations, or the implementation of new plans that took place after 1st January 2020, will not be included in this thesis, as the framework is limited to the preparedness level in place before the outbreak of the Covid-19 pandemic. This decision establishes an overview of the preparedness plans in place at the start of the pandemic, and thus allows an opportunity for future researchers to evaluate the measures in place before the start of the Corona pandemic and connect them to measures implemented during the pandemic.

The selected preparedness plans for this thesis are all part of the national framework for health and care related emergency preparedness and crisis management. The plans are

divided into hierarchical levels of importance and the plans concern both general health related preparedness, and specific measures to counter various communicable diseases and infectious outbreaks.

After presenting a summary of relevant material from each preparedness plan, a summary of the most relevant findings from each plan will be included. Three questions will also be utilised in the data collection of the five preparedness plans (described in chapter 4.3), in order to provide a better basis for analysis in the following chapter. The first two sub-questions will be covered in the ‘findings’ subchapter, while the last sub-question will be discussed in point 5.8.

References made in the specific preparedness plans for each sub chapter, will only show the page number of the source; however, all other sources will be included as usual.

5.1 CRISIS MANAGEMENT, PREPAREDNESS PLANS, AND REGULATIONS

Experienced threats and the ‘closeness’ of threatening events play a vital part in shaping the Norwegian crisis management. Even though it is *known* that a particular event might be eminent or a ‘most-likely scenario’, if it is not perceived as urgent by policy-makers or the population at large, other pressing policy areas are more likely to be prioritised. The WHO listed influenza pandemics as one of the 10 threats to global health as late as 2019 (World Health Organization, 2019), and have done so since the second publication of the World Health Report in 1996 (World Health Organization, 1996). Similarly, several Norwegian organisations have emphasised the impending threat of an outbreak of a pandemic influenza in the near future, e.g. in the DSB’s ‘Crisis Scenario Analysis of 2019’ (AKS). As pandemics represent ‘unknown unknowns’, flaws to the crisis management and preparedness only become visible once they are tested in real life situations. Therefore, learning and evaluation processes become increasingly important after such incidents as the quality of this learning potentially could affect future management of similar crisis.

5.2 THE CREATION AND REVISION OF THE PLANS

Table 2 presents an overview of the processes behind the creation of the plans, and the triggering factor (shown in light blue, second row from the top). The top row contains the name of the plan, in addition to the organisation that wrote it.

Table 2 The process behind the creation of the newest edition of the five plans.

NHPP by: HOD	CBRNE by: HOD, JBD, MD		OSID by: HOD	PPI by: HOD	AKS by: DSB
26.12.2004 <i>Sumatra–Andaman earthquake</i>	22.07.2011 <i>Terrorist attack in Norway</i>		2014-2015 <i>Ebola in West Africa</i>	WHO published pandemic preparedness plan in 1999	Royal decree of 24th June 2005
27.05.2005 By the JBD St. Meld nr. 37 (2004-2005).	13.08.2012 By the 22nd July Commission NOU 2012 : 14		09.12.2016 By the JBD Meld. St. 10 (2016–2017)	January 2001 1 st edition published	Reports published by DSB since 2006. New name in 2012
09.06.2005 Innst. S. nr. 265 (2004-2005) <i>Submitted</i>	15.06.2012 By the JBD Meld. St. 29 (2011-2012)	20.03.2013 By the JBD Meld. St. 21 (2012-2003)	23.05.2017 Innst. 326 S (2016-2017) <i>Submitted</i>	2003 2 nd edition published (revision)	April 2012 Specialisation: municipal preparedness against loss of power
13.06.2005 Approved	06.06.2013 Innst. 426 S (2012-2013) <i>Submitted</i>	06.06.2013 Innst. 425 S (2012-2013) <i>Submitted</i>	29.05.2017 Approved	16.02.2006 3 rd edition published	June 2013 16 risk analysis + 1 new (mudslides in city areas)
31.07.2007 By the HOD Final version 1 st ed. NHPP	13.06.2013 Approved		04.10.2016 Strategy for CBRNE published	24.01.2008 By the ECDC and HOD Final report influenza pandemic preparedness in Norway ⁹	December 2014 Earthquake, cyber-attack, fire in tunnel
02.06.2014 By the HOD 2 nd ed. NHPP	05.06.2013 DSB tasked to map risks in society, Part I of report was completed <i>Report Part I delivered to JBD 06.01.2014</i>		02.12.2019 By the HOD OSID plan published	2008 Report from DSB, focus on societal consequences of pandemics ¹⁰	2015-2018 Single reports New name in 2017
09.12.2016 By the JBD Meld. St. 10 (2016–2017)	26.06.2014 HOD, JBD, and MD mandated the DSB to lead risk-analysis group for Part II			2009 H1N1¹¹ pandemic	February 2019 AKS published
23.05.2017 Innst. 326 S (2016-2017) <i>Submitted</i>	01.09.2015 Draft for strategy and report Part II and III delivered			08.03.2013 By the HOD Meld. St. 16 (2012–2013)	
29.05.2017 Approved	04.10.2016 Strategy for CBRNE events published			14.05.2013 Innst. 298 S (2012-2013) <i>Submitted</i>	
01.01.2018 By the HOD 3 rd ed. NHPP				03.06.2013 Approved	
				16.12.2014 4 th edition published	

⁹ Report by ECDC and Norwegian Ministry of Health and Care Services (2008, p. 4) that point out further improvements to the pandemic preparedness.

¹⁰ The specialised theme from the report by Direktorat for Samfunnssikkerhet og Beredskap (2008) was on pandemic influenza

¹¹ A revised plan was suggested used in the 2009 pandemic, but it was decided against, as the HOD had not yet processed the new plan (Direktorat for Samfunnssikkerhet og Beredskap, 2010, pp. 34-35).

Table 2 does not only trace the processes behind the creation of the plans, but also demonstrate the connection to previous events or policies that have contributed to shaping the overall preparedness in Norway. It provides an overview of connected the connected processes that were a big part of how the plans came to be, and the previous decisions that shaped the content of the different plans. Additionally, the blue field, second from the top, provides the triggering cause at the start of the path. For instance, the terrorist attack on the 22nd July 2011 would prove to be one of the significant events behind the creation of the CBRNE, similarly as the OSID would be heavily influenced by the outbreak of Ebola in West Africa between 2014 and 2015, in addition to the creation of the CBRNE strategy. This table is to be read top-down, where impactful events are listed chronologically.

5.3 NATIONAL HEALTH PREPAREDNESS PLAN (NHPP)

Produced by HOD, (Helse- og Omsorgsdepartementet, 2018b)

The NHPP is an overall framework that defines the different roles and responsibilities of all actors involved in the preparedness work and crisis management, including their mandate on the preparedness of the health and care sector (p. 4) in all types of health related crises. The NHPP presents the legal framework that guide this, and every other preparedness plan or strategy, role distribution among actors and their responsibilities, scenario-based tasks, in addition to providing advice on preventative measures and the general preparedness. International coordination and collaboration efforts are also included in this document. Some of the information provided in this document is unconsidered for further analysis, due to its relevancy for this thesis, as the NHPP it contains guidelines on all health-related crisis scenarios.

The HOD is responsible for this preparedness plan, and the third edition from 2018 is the most recent publication of this document. The first edition came in effect on 31st January 2007, and was as a response to the 2004 Sumatra–Andaman earthquake. It became painfully apparent during this natural disaster, that Norway needed new preparedness strategies in order to accommodate the growing need for improved crisis management in times of crisis. An updated second edition came in effect on the 2nd June 2014, and included improved guidelines for cooperation efforts, based on experiences made from previous crises. The NHPP lists the 2009 H1N1 pandemic, the volcanic eruption on Iceland in 2010, the nuclear disaster in Japan in March 2011, the terrorist attack in Norway on 22nd July 2011, the Dagmar hurricane in

2011, and the terrorist attack against Statoil in Algeria in January 2013, as events that prompted the changes to be implemented to the second edition (Helse- og Omsorgsdepartementet, 2014b, p. 4).

The NHPP and every other preparedness plan follows Norwegian legislation, such as the HSP, the CCD, and other related laws and regulations. The preparedness plans are structured hierarchically, and the HSP is the overarching plan in the preparedness framework. Other preparedness plans, which are more specific in order to manage certain incidents, all follow the generalised guidelines set by the NHPP.

Changes in the third edition of the NHPP ensures that the general principles behind the emergency preparedness, to a larger degree, have been implemented in the plan. Arenas for cooperation are highlighted, the description of the status of the various preparedness plans have been improved, and the dependencies on infrastructure and medical resources have been emphasised. The NHPP builds on previous experiences from exercises and real-world events, such as the increased international and domestic terrorist threat in the summer of 2014, the Ebola outbreak in West Africa in 2014-2015, and increased asylum-seeking immigration in 2015-2016 (p.4).

The NHPP is comprised of ten chapters, and divided into four themes. It starts by presenting involved actors, the regulatory framework, and it describes how collaboration across national and international actors can be organised. It then presents specialised preparedness plans, before it moves on to crisis management. A summary of the most relevant information will be included and further discussed in chapter 6 of this thesis.

Chapter 1 in the NHPP start by introducing the background and reason behind the establishment of the document, while Chapter 2 covers the legal framework for preparedness planning. Chapter 3 starts with presenting an overview of relevant reports, analysis, and responsibilities, which the health and care sector is expected to be familiar with, such as the '*The Overall Risk and Vulnerability Assessments for National Preparedness in the Health and Care Sector (ORV)*' published by HDIR, the AKS and "*Vital functions in society*" published by the DSB, in addition to the White Paper "*Meld. St. 10 (2016-2017)*" (p.10- 11). HDIR has the responsibility to plan and carry out a bi-annual national exercise event for the health and care sector – the most recent exercise being carried out in 2018, and was a cross-sectoral training event called Trident Juncture.

Chapter 4 describes the different role and responsibilities of relevant actors, while Chapter 5 describes the role and responsibilities of the different Directorates and how cross-sectoral collaboration should be implemented and conducted. Chapter 6 outlines the international collaboration between Norway and various organisations in the case of a border-crossing event, such as a pandemic. Norway participates in international collaboration where prevention, monitoring, detection and response, and disease management, are key preparedness components, in addition to being part of a Nordic agreement that ensures the exchange of information in times of crisis, and during threatening events, among the Nordic countries.

HOD, HDRI, and NIPH are the three main actors in charge of the preparedness strategies on a government level, particularly in the case of a pandemic outbreak. HOD is responsible for the overall national health preparedness, and govern the responsibility through local and national regulations, laws, and supervisory efforts. The minister of HOD also has ministerial responsibility, and is therefore responsible for everything that happens in the health and care sector, in a downward-pointing vertical organisational line.

HDRI is responsible for the national health preparedness based in its role. The task of the directorate is to ensure the upholding of collaboration between actors in the health and care sector, and between other sectors, to maintain its advisory role, implement policy, and manage regulation. HDRI provide guidelines and guidance to municipalities through the state administrator, and facilitate exercises and competence development. The HDRI is, after delegation from the HOD, to be responsible for national coordination efforts in the health and care sector, and tasked to implement necessary measures when a crisis threatens or has occurred. HDRI also has the ability to implement such coordination efforts without having conferred with HOD first, if the situation calls for it. HDRI chairs the '*pandemic and epidemic committee*', which is an advisory body to HDRI and NIPH (p. 14), in addition to chairing the '*Health Contingency Council*' that is tasked to ensure increased collaboration between the civil and military sector in times of crisis. HDRI is also responsible for collaboration and communication with NGOs and lower-lever government agencies.

The NIPH is a national advisory organisation for the health and care sector. NIPH is tasked with the supervision of communicable diseases, detect and response strategies, the national vaccine preparedness, the national vaccination register, and to act as a point of contact with international organisations, such as the IHR, WHO, EWRS, and EU. NIPH should provide aid and counselling to municipals, counties, and other national organisations if

necessary, as well as provide information on communicable infectious diseases and infection control measures to healthcare workers and the population at large. NIPH have an advisory role to the HDRI, where they provide professional advice should it be required or necessary.

In addition to these three government organisations, different competence organisations are also part of the crisis management and preparedness at a national level. One of these is the CBRNE centre (p.19), which is tasked to conduct research on the CBRNE area, increasing knowledge and responsiveness, strengthening cooperation and collaboration between first responders and high-risk responders, and the coordination and management of a national medical team for high-risk infectious disease patients.

In addition to generic preparedness plans, more specialised plans are also part of the preparedness framework. Chapter 7 list *'mass-injury events'*, *'CBRNE-events'*, *'plans and systems to reduce vulnerability and dependencies'*, and *'armed conflicts and war'* as the most probable threats against Norway. Pandemics and epidemics are mentioned in the CBRNE-preparedness section as B-events – i.e. events that include a biological agent – and emphasises the crisis management responsibilities established by the CCD. Chapter 8, 9, and 10 focus on crisis management and the different roles each actor or organisation has in the case of a crisis, in addition to national and international detection systems.

Noticeable changes have been made from the second edition to the third edition in the NHPP. The third edition from 2018 has a more specified focus on armed conflicts, terror incidents, and decreasing dependencies. The second edition of the NHPP from 2014 focussed more on communicable infections, as mentioned in the sub-chapter 4.0 in the NHPP, e.g. *'4.2 preparedness against bioterror'*, *'control of communicable diseases and pandemic preparedness'*, and *'4.3 preparedness against acute pollution and chemical incidents'* whereas no such chapters had been dedicated to pandemic preparedness in the third edition . However, with the renewal of the NHPP in 2018, more specified plans had already been implemented, and the need to include further management strategies in the NHPP may not have been necessary. Additionally, there were no major outbreaks of communicable disease in Norway between 2014 and 2018, which may have contributed to a lack of 'sensed threat' that in turn caused a lack of experienced urgency on the area.

However, findings from the Trident Juncture 2018 exercise demonstrated that despite the NHPP being an overall framework, the plan was to a lesser degree an operational plan. Therefore, the HDIR are considering the need to develop a new operational plan that could fill the gap between NHPP and other preparedness plans (Helsedirektoratet, 2019a, p. 34). The

ORV have also pointed to the need for a more uniform use of central terms and definitions within the preparedness sector (Helsedirektoratet, 2019a, p. 34). The focus on terror threats and other mass-injury events appears to be the main focus of the 2018 edition, which might be further supported by the national exercise event Trident Juncture from 2018, which was a collaborative exercise held with the military (Dale, 2019). However, the White Paper Meld. St. 10 (2016–2017) (p. 99) emphasises that an analysis of the most severe scenarios that could affect Norway have estimated that a pandemic was the most likely event to occur, that would also have the biggest societal consequences.

As mentioned in the NHPP, experiences made from various natural disasters, the 2009 H1N1 pandemic, and the heightened terrorist threat, contributed to the need to update the second edition of the plan. However, updates in the third edition of the plan were mostly implemented as a response to natural disasters and to domestic and international terrorist attacks, and not based on the high likelihood of a new pandemic. Some of the more important improvements made in the third edition, was for instance to further enhance the cross-sectoral cooperation and coordination efforts.

5.4 NATIONAL STRATEGY FOR CBRNE-PREPAREDNESS 2016-2020 (CBRNE)

Produced by JBD, HOD, MD, (Justis- og beredskapsdepartementet et al., 2016a)

The CBRNE strategy was presented by JBD, HOD, and MD, based on a draft on a cross-sectoral report (Part III) for a strategy on 1st September 2015. A decision was made to evaluate the CBRNE strategy at the end of the four-year period in 2020, as the area is in continuous development. This evaluation was meant to create the basis for further revisions and changes to the work on preparedness on dangerous substances and communicable diseases (Justis- og Beredskapsdepartementet, Helse- og Omsorgsdepartementet, & Forsvarsdepartementet, 2016b). The CBRNE plan is intended to be used at a central government level, but municipal and county officials are expected to base their local CBRNE strategy on this plan.

The CBRNE strategy need to be viewed in context with the preceding reports that have laid the foundation for this strategy. The DSB was tasked in assignment letter 10 on the 5th August 2013 to complete report Part I, which was sent to the JBD on the 6th January 2014 (Direktorat for Samfunnssikkerhet og Beredskap, 2014a, p. 5). On the 26th June 2014, the JBD, HOD, and MD mandated the DSB to lead a project group to describe and analyse the

preparedness status on the CBRNE area, i.e. reveal weaknesses and challenges. This work was presented in three reports, and the findings was compiled in Part I and Part II. The analysis from Part II was later used as a foundation for Part III, which would in turn lead to the CBRNE strategy of 2016 (Helsedirektoratet et al., 2015, p. 13). Due to the complexity of the academic work, it was decided that Part II and III were to be delivered to the JBD on 1st September 2015, 6-4 months after their original deadline (Helsedirektoratet et al., 2015, p. 14).

The CBRNE strategy originated from the white papers Meld. St. 29 (2011–2012), and the Meld. St. 21 (2012–2013) – which followed-up the discoveries made in the NOU 2012: 14 (2012) report – where CBRN events were presented as situations that required increased preparedness in regards to possible future terrorist attacks, though pointed out that biological agents rarely had been utilised in terrorist attacks in the past (p.26). The Meld. St. 21 (2012–2013) was the first white paper that proposed a draft of a CBRNE strategy, as it continued the perspective on societal security provided in Meld. St. 29 (2011–2012). The Meld. St. 21 (2012–2013) (p. 11) stated that the government would develop a national strategy for dealing with attacks by chemical, biological, radiological, and nuclear substances, which constitutes the task of the CBRNE preparedness. Further, the DSB was tasked on behalf of the JBD, to prepare a national strategy for emergency preparedness against CBRN events. The strategy covers both undesirable misguiding incidents and major accidents where such substances are involved (Meld. St. 21 (2012–2013), Chapters 8.18, 8.2).

The CBRNE preparedness plan was developed in order to improve the capacity to prevent and manage CBRNE-events. Currently, Norway is able to counteract and manage smaller, day-to-day events, which made this preparedness plan focus on events that can cause a greater extent of damage, and that would require extraordinary emergency resources in addition to collaboration and coordination between several actors. The CBRNE plan emphasises the importance of preparation and on the day-to-day preparedness for smaller events, which acts as a cornerstone in the Norwegian crisis management. Preparedness and crisis management should also be built on, and adapted to, local preparedness plans, which can be supplemented with regional and national capacities if necessary (p.3).

The CBRNE strategy is the result of three rounds of reports, and consequently, does not go into depth on each measure. The strategy is divided into seven chapters, which addresses responsibilities, management of events, main challenges, goals for the strategy, main priorities and measures, and economic and administrative consequences. In order to

establish a better basis for further analysis, government documents, NOU's, white papers, and the report for Part II of the CBRNE preparedness have been included in the following section.

CBRNE is a classification of possible events, which includes (c) chemical substances, (b) biological agents, (r) radioactive substances, (n) nuclear materials, and (e) explosives. This thesis will only consider the parts on the management of biological agents in the preparedness plan. Biological events are defined in the CBRNE strategy as an agent that can cause sickness caused by microbes (viruses, bacteria, fungi, toxins), which has the ability to spread through the air, surfaces, through human interaction, from animals and insects to humans, or between animals (p.4). HOD is responsible for coordination and crisis management if a biological event were to occur. The B events are, in part, based on the previous experiences with the Norwegian Ebola patient in 2014, the 2009 H1N1 pandemic, food-born e-coli outbreaks in 2006 and 2009, the legionella outbreak in Østfold in 2005, and the giardia lamblia outbreak in Bergen in 2004 (Meld. St. 10 (2016–2017), pp. 100-101).

Chapter 1 states the intention of the plan, which is to further develop Norway's ability to prevent and manage large CBRNE events. Chapter 2 states the responsibility of the different ministries in each of the five categories: JBD is responsible for C and E events in civilian cases, but not in schemes established within acute pollution, where the Ministry of Transport and the Norwegian Coastal Administration have separate roles. HOD is responsible for B events, in addition to the RN events in civilian cases. The Ministry of Climate and Environment is in charge of the crisis management in situations with acute radioactive pollution. The MD is responsible for the entire CBRNE preparedness in the defence sector.

The principles of liability, proximity, conformity, and collaboration are the foundation for collaboration between ministries, directorates, and regions in the CBRNE preparedness, in addition to the central crisis management (p.5). The CBRNE strategy points out that in cases with unwanted events, an overall coordination from central governments will always be required. Chapter 4 points to the challenges emergency responders face in larger CBRNE events, as they have been unable to train and prepare for such events. The complexity of such incidents could also be significantly greater than day-to-day accidents (p.6). In these cases, the central government would need to provide resources and competences to support local actors, and it is vital that all actors quickly gain a common situational understanding. The chapter further stress the means in which technology and international trade could provide information on how to produce CBRNE agents for terrorist attacks or weapons. It further note

that import and export control, in addition to other preventative measures, contributes to preventing unauthorised people from getting their hands on CBRNE materials (p.7)

In order to be more prepared for B-events, it is suggested that there should be regular, formal meetings on coordination, prevention, preparedness strategies, and improved management within and between sectors (p.9). Suggested measures are to update the NHPP, and to establish a cross-sectoral collaborative arena for prevention, preparedness, and management of B-events on a directorate level under HOD. HOD would also include coordinative efforts in the 'National Emergency Preparation Plan against Outbreaks of Severe Infectious Diseases' (OSID), and establish a cross-sectoral arena for collaboration, prevention, preparedness, and management of future crisis (p.10). HOD would also have the responsibility to strengthen the National Preparedness Plan for Pandemic Influenza (PPI), which include continuity planning, and domestic and international collaboration for prevention, monitoring, notification, and management (p12).

One of the most prominent reasons behind the creation of the CBRNE strategy, is implied to the increased threats of terrorist attacks, as the strategy is based on the white papers on societal security and terror preparedness (Meld. St. 21 (2012–2013); Meld. St. 29 (2011–2012)) that was adapted as a response to the poor crisis management on the 22nd July 2011. Additionally, there is a considerable focus on the prevention of CBRNE-related terrorist attacks, even in case of B-events. As the strategy is based on three reports, the information it contains, and the reason behind it, is lacking. It would have been possible to connect this strategy more closely to additional documents on the creation process, and to risk analyses made prior to this strategy. Nevertheless, other documents that aid in the explanation behind the creation of this strategy are drafts or descriptions of analysis that were the precursor to the adopted CBRNE strategy.

The responsibilities in the CBRNE strategy are based on the lines of responsibility provided in the NHPP, and though it calls for increased cross-sectoral collaboration, it does not mention how such a collaboration could be organised or carried out. Challenges listed on B-events are, for the most part, limited to acknowledging possible challenges. The chapter on measures for improvements do not address these challenges any further. DSBs evaluations of the 2014-2015 Ebola outbreak and the 2009 H1N1 pandemics have also pointed to the need for increased cross-sectoral collaboration on crisis management in order to be able to more efficiently manage B-events (p.9). The strategy does not contain specific measures in the case

of a B-event, but rather focus on the framework and tasks that would need to be improved in advance.

5.5 NATIONAL EMERGENCY PREPARATION PLAN AGAINST OUTBREAKS OF SEVERE INFECTIOUS DISEASES (OSID)

Produced by HOD, (Helse- og omsorgsdepartementet, 2019)

As a follow up on the national strategy for CBRNE-preparedness of 2016-2020, the HOD drafted the OSID in 2018 to further develop the preparedness against biological factors and to establish Norway's cross-sectoral collaboration for the prevention of communicable diseases, increase preparedness, and the management of biological threats on a national level. The plan was finished and subsequently published in 2019. The Mandate for the Emergency Preparedness Committee against Biological Incidents with Counselling and Coordination at a Regional Level (BBH) was also established at the same time as the OSID. The OSID and BBH are built on experiences from previous events and exercises, and the purpose was to prevent sickness and spiking mortality rates in the population, and to facilitate the continuation of important societal functions throughout all sectors (Helse- og omsorgsdepartementet, 2018a). The OSID is primarily a tool developed for leaders, doctors, and healthcare personnel in the primary and specialist healthcare service; nevertheless, it is still a useful tool for other sectors (p.5). The OSID is a disease specific plan and is supplementary to the NHPP and the current legislation (see Figure 3 on p. 45).

Additionally, the OCC distinguish between general communicable diseases and other infectious diseases. Severe infectious diseases are, in most cases, defined as a general communicable disease and hence covered by the regulation on general communicable diseases (p.6). With this definition, certain provisions in the OCC becomes applicable, e.g. disease tracing, free medical assistance, forced treatments, and other control measures to prevent the spread of the disease (Smittevernloven, 1994, § 1-3).

The OSID addresses the significant threat communicable diseases poses on society and the global public health. It lists some of the biggest reasons for why infectious diseases have become more frequent – and have a spread easier – in the last decades, which is due to increased population growth, climate changes, urbanisation, increased cross-border travel activity, and a shared international food market. The plan further points to the outbreak of SARS, MERS, pandemic influenza, the Ebola outbreaks, and the Zikavirus, as communicable

infections that have demanded a considerable preparedness effort in Norway. Domestic outbreaks of E.coli, legionella, and giardia lamblia have also revealed the importance of maintaining and improving the preparedness for communicable diseases outbreaks (p.5), as pointed out in the CBRNE plan.

The OSID defines severe infectious disease as diseases that can cause high mortality rates and requires extensive measures (p.7). The NIPH is responsible for determining whether there is an outbreak of a severe infectious disease or not. Outbreaks of a biological nature are classified in four different Bio Safety Levels (p.9); the first level being an outbreak of a biological factor that usually do not causes illness in humans. The second is a biological factor that can cause infection in humans, but have a low chance of spreading to society, and where effective preventative measures or treatments are available. The third is a biological factor that can cause a severe infection in humans, and that can cause a real threat to workers. There is a high probability for it to spread through society and there is usually no effective preventative measures available. The fourth level is a biological factor that causes a severe infection in humans and pose a serious threat to workers, with a high probability to spread to the rest of society. There usually is no effective preventative measures available. The term 'high risk disease' is oftentimes used to describe this fourth level, and implies an infectious disease that easily spreads between humans, and is associated with high mortality rates, where there normally is no effective treatments available.

Chapter 3 of the OSID states the goals, strategies, principles, and the organising of the preparedness plan. The aim of this plan is to; prevent and limit the spread of communicable disease and sickness in the population, prevent fatalities, improve treatment and care for the afflicted or dying, maintain trust and safety in society through knowledge-based and comprehensive information and guides to the population and all sectors, and to maintain necessary operative functions in all sectors. The preventative strategies for outbreaks of severe infectious diseases varies according to the type of outbreak, but usually contain: monitoring, detection systems, and creating an overview of the situation through reporting, general infection control measures, vaccination, medical treatment of the sick, isolation and quarantine, and if necessary, the restructuring and reallocation of resources in order to increase capacity. Chapter 5 further elaborates on the general measures available with the outbreak of a severe infectious disease (p.19), and the legal framework for each measure. The measures to reduce infection rates in the population is hygiene measures (cough and hand sanitary measures, the use of personal protective equipment, and environmental sanitary

measures), isolating affected individuals or groups, and limit activities (prevent large gatherings and travel restrictions) (p.22).

Chapter 6 addresses the communication perspective of infectious diseases, and establishes roles and responsibilities, coordination, target groups and documentation. Chapter 7 has a short section on ethical challenges, chapter 8 on psychological support, chapter 9 on economic and administrative conditions, and chapter 10 on exercises and training events. Chapter 11 focus on international collaboration, e.g. the EU and WHO, in addition to collaboration within the Nordic agreement. Most of the content from chapter 7-10 is covered by other strategies or plans.

The OSID was based on previous disease outbreaks, epidemics and pandemics, such as the Ebola outbreaks (Meld. St. 10 (2016–2017), p. 104), the 2009 H1N1 pandemic, measles outbreak (see: p.22-23) and the Zika virus. Several domestic outbreaks of infectious food-borne diseases such as E.coli have also pointed to the need for good preparedness plans. The OSID was also a plan that followed-up on the B-section of the CBRNE preparedness, and went into detail on specific measures during an outbreak of a severely infectious disease. In comparison, the CBRNE plan does not go into details on the specific measures, but rather task various ministries with different areas of responsibility. The most important infection-reducing measures is hygiene measures, isolating the sick, and the limitation of activity.

The OSID is the only preparedness plan that has included comprehensive definitions and concepts of the most important terms in health and care related preparedness. Generally, there is a lack of good definitions in the preparedness plans, which could lead to a poor situations understanding or misunderstandings in the early phases of a crisis or complex emergency. The need for a uniform use of key concepts within the sector, but also between sectors, have been pointed out by various plans, analysis, or strategies (Helsedirektoratet, 2019a, p. 34), as good communication relies on a common understanding of each other's terminology, references, contexts, and words. Good definitions and a common terminology could also make it easier to collaborate and coordinate with other actors or organisations, because it could help increase the understanding of the situation, and highlight the specific responsibilities and the role of the actors.

5.6 NATIONAL PREPAREDNESS PLAN FOR PANDEMIC INFLUENZA (PPI)

Produced by HOD, (Helse- og omsorgsdepartementet, 2014a)

The fourth, and latest, edition of the National Preparedness Plan for Pandemic Influenza (PPI) was published in 2014 and has not been updated since. As a result, it is the oldest preparedness plan examined in this thesis. Paradoxically, the PPI calls for the need to keep updated preparedness plans and strategies for pandemic preparedness (p. 32, 44) in the health and care sector. The ‘pandemics committee’ is tasked to annually review whether a revision of the PPI is necessary (p.17), and since no revisions have yet to be carried out, some of the information could be deemed as outdated, e.g. parts that reference to the implementation of new preparedness plans that existed at the end of 2019. Nevertheless, it is the most comprehensive preparedness plan in this essay, and covers goals, measures, actors, generic literature on the area, and the like.

The PPI was first established in 2001 by HOD, and was based on the suggestions made by the WHO after publishing the WHO Influenza pandemic plan in 1999. The second edition came in 2003, and the revision of the plan was limited to the adaptation of the plans’ new tasks and responsibilities after the re-organisation of the central social and health management, in addition to the specialist health and care reform from 2002. The third edition from 2006, came after a revision and expansion of the second plan (Meld. St. 16 (2012–2013), p. 44), and was a response to the outbreaks of avian flu and the recommendations provided by the WHO and EU to keep updated preparedness plans and to include the new phase division. The 2014 edition is the fourth and most recent version of the document (Helse- og Omsorgsdepartementet, 2006, p. 1) and was published after the 2014 edition of the NHPP. The first plan – as well as the third and fourth edition – was based on the experiences made in the 1918/19 H1N1, 1957 A/H2N2, and 1968 A/H3N2 pandemics (Helse- og Omsorgsdepartementet, 2006, p. 3; 2014a, p. 8; Sosial- og Helsedepartementet, 2001, p. 2) and these pandemics inspired the possible scenarios for future pandemic influenza outbreaks.

The PPI determines and distributes responsibilities in management for several organisations, including both the private and the public health and care services. The goal of the PPI is to ensure a common pandemic preparedness in order to manage an influenza pandemic, and facilitate for the continuation of necessary societal functions within all sectors during a pandemic. It aims to do this by: preventing and limiting infection, sickness, and fatalities; provide treatment and care to the sick and dying; maintain trust and security in society by providing comprehensive and knowledge-based information and guidelines to the

population, sectors, and Norwegian citizens abroad; contribute to maintain vital societal functions (p.9). The plans' main strategy to manage a pandemic is to vaccinate the population. Until a vaccine becomes available, preparedness-stored antiviral pharmaceuticals should be used to treat the infected, in addition to common sanitary measures (Direktorat for Samfunnssikkerhet og Beredskap, 2019, p. 67).

The PPI is divided into three parts, which all need to be understood in their own context. The first part is a 'general part' that presents the goal of the PPI, its target-groups, in addition to the roles and operative responsibility of the different actors throughout the various phases of a pandemic. It also reference the NHPP for a general overview of roles and responsibilities. The second part, 'measures' is the most important part of the document, as it describes measures and goals for the various actors in accordance with the WHO's phase divisions for pandemic influenza (p.5). The third, 'professional elaboration and background' presents guides on communication, surveillance, reports, and diagnostics on influenza, infection control measures, vaccines, pandemic scenarios, and preparedness plans for municipalities and the specialist health services.

The PPI was drafted in the aftermath of the 2009 H1N1 pandemic and is built on experiences, assessments, and knowledge collected in the evaluation process (p.7). The pandemic was classified as moderate by the WHO (p.8), and changes to the preparedness strategies provided by the WHO were incorporated into the PPI. It is a generalised plan intended to provide valuable resources to manage a pandemic in all its phases (p.7) The intended recipient for this preparedness plan is particularly the health and care sector, but also other sectors, in order to aid them in their work to establish their own preparedness plans (Folkehelseinstituttet, 2015). Municipalities and the special health service providers are responsible for creating their own specialised preparedness plans according to the HSP and the CCD (p.7), but the PPI is intended to act as a guide on important aspects that should be included in the different plans (p.6). The DSB, in collaboration with HDIR, published the "Continuity Planning – Pandemic Influenza (KPI)" in the period 2009-2010, which can be applied as a foundation for preparing for a large internal absence in their organisations (p.7).

Pandemics caused by communicable diseases is one of the most likely possible causes of future acute crises in Norway (p.8). Accordingly, exercises remain an important tool in order to control whether plans, detection and response systems, reporting, and lines of communication are functioning as intended. This applies for all levels of government, where every sector has the responsibility to initiate preparedness exercises (p.9). These exercises

could also be part of a collaborative effort with other cross-sectoral exercises that have different goals, or as a specified health related exercise. In cases with cross-sectoral collaboration on a national level, the JBD would act as the central driver of the exercise (p.9)

After the H1N1 2009 pandemic, the estimated number of deaths were between 150,000-550,000 people worldwide. On the other hand, the H1N1 1918/19 pandemic were estimated as killing more than 40 million people, and is oftentimes used as a ‘worst-case’ scenario for influenza models and preparedness planning (pp.27,84). However, due to the increased standard of living and improved sanitary conditions, in addition to new treatments options such as vaccines, antivirals, and antibiotics, one assumes that a future pandemic would result in a significantly lower mortality rate (p.78) than what were seen during the 1918/19 H1N1 pandemic.

The central administrative system for crisis management builds on the main principles for preparedness work in Norway (p.10) – liability, proximity, conformity, and collaboration. The ministries has sectoral responsibility, in addition to the preparedness planning within its own sector. This structure applies for all crisis situations, from natural disasters, pandemics, or war, and should not be of hindrance in order to make appropriate adaptations in a crisis (p.10).

The PPI has not been changed since its fourth publication in 2014, even though it was specifically called for in the CBRNE plan (Justis- og beredskapsdepartementet et al., 2016a, p. 12). The PPI and other preparedness plans call for a regular, oftentimes yearly, revision of the most important preparedness plans. To provide vaccines to the public was the one of the main strategies during the 2009 H1N1 pandemic, and as it was an influenza pandemic, vaccines were readily available after a short period – it took about six months from the beginning of the pandemic in April 2009, to a finished vaccine in October 2009 (Flahault & Zylberman, 2010, p. 320). This might help explain why the central focus of the PPI is the vaccine strategy, which is based on previous strategies from former influenza pandemics. The PPI was also updated in 2014 due to the revised pandemic phases provided by the WHO (p.24) which can be viewed as an indication of changes to the biological and epidemiological situation both domestically and internationally. One of the main updates in the 2013 WHO report was the strengthened strategy of vaccine responses (World Health Organization, 2013) The PPI, in turn, provides a good framework for the management of a pandemic in the phases provided by the WHO. How healthcare personnel and central actors should act in specific scenarios, make up most of this plan.

5.7 CRISIS SCENARIO ANALYSIS OF 2019 (AKS)

Produced by DSB, (Direktorat for Samfunnssikkerhet og Beredskap, 2019)

The Crisis Scenario analysis is a report published by the Norwegian Directorate for Civil Protection (DSB), and was first published in 2011 (p.5). The reports cover 16 risk areas that could pose a threat or danger to the Norwegian society, such as nuclear disasters, politically motivated violence, earthquakes, and extreme weather, and contain 25 different risk-analyses (p.9). The AKS is a cross-sectoral risk analysis that presents information, and aim to create awareness amongst the different administrative levels (p.9). From 2011 to 2014, the AKS was published as a yearly collection of reports, and has since then been published as regular sub-reports for each analysis. The 2019 report is the first collection of reports published since the previous in 2014, due to the broad timeframe these reports are meant to cover (p.13). The 2019 edition of the AKS is comprised of a collection of all the 25 completed risk-analysis included in the 2010 version (p.22). The risk analyses in AKS has a social scientific qualitative approach, as they analyse events with a limited data basis, and where the consequences of such events is considered as a loss of societal values, which to a large degree is qualitative assessment (p.25).

Chapter 5 addresses three different scenarios concerning the outbreak of diseases. The first scenario is a downscaled version of the scenario presented in the 2006 PPI, with Thailand as the origin country. The second is scenario is on food-born infections, and the third is on an outbreak of an antibiotic-resistant bacteria. The scenarios provided in this chapter on pandemic outbreaks in Norway, is based on previous experiences from pandemics in the last 100 years, such as the 1918/19 H1N1, 1957 A/H2N2, 1968 A/H3N2, and 2009 H1N1 pandemics, and the epidemic Ebola outbreak between 2014 and 2016 and again in 2018 (p.66). The pandemic scenario presented in the AKS is roughly based on the 1918/19 H1N1 pandemic (p.11), due to the severe consequences it had on the population across the world. A pandemic scenario scores high in regards to the transferred probability and consequences in DSBs risk matrix, and it is estimated a 75% probability for an outbreak of a severe pandemic in the next 100years (pp.13-14) – the same probability as medicine shortages. Nevertheless, a pandemic event is still estimated to have a lower probability than for instance fire in an underwater tunnel, rain floods in cities, medicine shortage, and foodborne infections (p.14), but it has the highest estimated consequence pr. scenario (p.15).

The information provided in this report can be included in RoS-analyses, planning-processes, training exercises on a local, regional and national level, and used in preventative

and harm-reducing measures (p.19). The Meld. St. 10 (2016–2017) (p. 161) highlights the AKS as a knowledge-basis for the work on societal security, and a document that provide an overview of the interests and values Norway seeks to protect. Further, it notes that DSBs crisis scenarios provide a good starting point for the municipalities' work to create their own risk and vulnerability analysis. Nevertheless, the sectoral and national expertise authorities within the specific areas have to evaluate the risk-acceptance and the subsequent measures, and present these for political process (p.30).

The infectious disease portion of the AKS is based on previous pandemic events such as the 1918/19 H1N1 and the 2009 H1N1 pandemic, the Ebola outbreak (p.66), and the terrorist attack on 22nd July 2001 (p.28). Amendments to this plan happens regularly (p.9), but since 2017, sub-reports for each analysis have happened separately from a collection of reports. It is a cross-sectoral report that aims at establishing cooperation and collaboration between the most important actors within crisis management. For several years, pandemics have been listed as the most likely crisis scenario with the highest societal consequences.

As it is a not a preparedness plan, nor a document intended solely for the health and care sector, it differs from the rest of the plans on certain areas, e.g. on definitions and terminology. The strategy relies on the Norwegian Defence Research Establishments (FFI)' definitions (p.28), which focusses more on the general crisis management instead of a more case specific crisis management (Busmundrud, 2019).

5.8 REFLECTION FOR FURTHER ANALYSIS

The four principles of crisis management – liability, proximity, conformity, and collaboration – is the building block of the Norwegian preparedness planning. So, to return to the third question '*How do the pandemic preparedness plans allow for autonomy or deviation from the established 'paths' of crisis management in order to solve an unforeseen event?*' our findings would be twofold. Firstly, as the four principles refer to a general method of crisis management, they do not limit the actors' room to adapt specific strategies in order to encounter a particular case. Secondly, as the principles establish an 'overall-framework' for where and by whom a crisis should be managed, the possibility is that an overwhelming crisis would not be managed sufficiently within this frame.

The first finding is that none of the plans follows an established, straight guideline for how to solve a practical task on the particular area they are set to manage. How these four

principles are applied in the different scenarios varies, and this would in turn provide a greater freedom for the different municipalities and organisations on how to best manage a problem. It gives the opportunity to manage situations based on what one would normally do, which implies that there is a strategy in place to handle such situations. However, the second finding would imply that this strategy works best for emergencies or disruptive events that can be planned and prepared for, and not a national crisis. It can be difficult to ensure good horizontal coordination in a stressful environment, especially if the coordination effort is with other actors that normally do not collaborate on bigger issues. Vertical coordination can be necessary in these cases in order to manage bigger events, and to ensure that all involved actors follow a similar plan. A crisis would also cause a path-breaking event, where the rebuilding of the path can entail different strategies for everyone involved, making coordination efforts even harder to accomplish.

These plans are made to be used on a national level, however, regional and local preparedness strategies are encouraged to use the information provided in these documents to their own preparedness plans – or RoS-analysis – as to ensure similar approaches. The plans themselves does not mention specific management strategies, but only builds on a general understanding of the four principles. They are for the most part, restricted to the work within the health and care sector, and few present a plan for cross-sectoral collaboration. As discovered in chapter 3, it is impossible to plan for a crisis, but it is possible to train and plan for collaborative efforts. Every plan points to the importance of gaining experiences and conduct exercises to be prepared for the outbreak of a pandemic, but none mentions *what* the most important aspect of these training exercises should be, or how to conduct them. This can contribute to an unequal preparedness between hospitals, small and large municipalities, and regions, who are tasked to conduct these exercises on their own, as they are in charge of their own preparedness.

There also is an expectation that there will be available vaccines, personal protection equipment, and medication when the crisis hits, or after a short period. There are preparedness plans that deal with these issues, but from the plans selected for this thesis, none take into account that such commodities might not be available. In addition, the estimation of the duration and severity of a possible pandemic have been based on influenza pandemics, most recently being the 2009 H1N1 pandemic, and have not prepared for a worst-case event, i.e. they have not been able to properly prepare for the worst case scenario and unknown unknowns.

This chapter has shown that five preparedness plans are based on previous experiences with pandemic influenzas, or other path breaking crisis i.e. natural disasters, terrorist attacks, and refugee crises. A summary of the most influential events that have shaped the preparedness plans, and which the plans or white papers have mentioned as the influencing factors have been included in Table 3. Events that took place both domestically and internationally have contributed to shaping the plans, and guidelines set by the WHO is included in the PPI and NHPP.

Table 3 Summary of findings: influence from previous events mentioned in the five plans

Plan	Edition	1918/19 H1N1	1957 A/H2N2	1968 A/H3N2	2003 SARS	2004 Giardia lamblia outbreak in Bergen	2005 Legionella outbreak in Østfold	2006 Food-born E-Coli outbreaks	2009 H1N1	2012 MERS	2014 Norwegian Ebola patient	2015-2016 Zikavirus	2014-2016 and 2018 Ebola outbreaks	Other influential events *Cause of changes to the plans **focus of the plan
NHPP	2007	X												*2004 Sumatra-Andaman earthquake
	2014	X							X					2010 Volcanic eruption in Iceland 2011 Nuclear disaster in Japan 2011 Terrorist attack in Norway 2011 Dagmar hurricane 2013 Terrorist attack in Algeria
	2018	X							X					2014 Terrorist threat 2014-2015 Ebola outbreak in West Africa 2015-2016 Increase in asylum-seeking immigrants
CBRNE	2016					X	X	X	X		X			*General fear of terrorist using B-compounds in their attacks **Increase cross-sectoral collaboration
OSID	2019				X	X	X	X	X	X		X	X	Improve cross-sectoral collaboration Follow-up on CBRNE plan Increased threat posed by communicable diseases (plus measles outbreak)
PPI	2001	X	X	X										**Main goal: vaccination strategies *Changes to the plan follows updated WHO guidelines
	2003	X	X	X										
	2006	X	X	X										
	2014	X	X	X					X					
AKS	2011	X	X	X					X				X	The AKS are long-term plans. **Focus on all aspects of the Norwegian preparedness.
	2014	X	X	X					X				X	*Cross-sectoral risk analysis.
	2019	X	X	X					X				X	

6 ANALYSIS

This chapter intend to analyse the empiric data collected from the five preparedness plans and other relevant documents and reports, within the theoretical framework provided in chapter 3. This theoretical framework encompasses two main perspectives, that of crisis management and path dependency, which is contextualised in the framework of crisis typology. The ‘path dependency’ sub-chapter address critical junctures and the self-reinforcing possesses in the preparedness planning, and possible lock-ins that might have occurred in the process of preparedness planning. The ‘crisis typologies’ sub-chapter address the different dimensions of a pandemic, the terminology provided in the five plans, and whether the plans prepare for crises or complex emergencies. Finally, the ‘crisis management’ sub-chapter address the core principles in Norwegian preparedness and crisis management, the suggested strategies for collaboration, and horizontal and vertical coordination.

As the world currently finds itself in the midst of the Covid-19 pandemic, the option to view the measures and plans in hindsight would become plausible in the analysis, as the different strategies already have been tested in a real-life situation. This approach would allow for the reveal of a new aspects of the preparedness plans, which would be unobservable before the beginning of 2020 at the start of the Covid-19 pandemic. Nevertheless, this approach have some pros and cons. It would allow us to evaluate the documents more accurately, since the content of the plans and suggested measures have become increasingly visible through testing. On the other side, it would be more challenging to see the plans in the context of which they were approved and created, as more is known today about managing pandemics that are not influenza pandemics, than it was previously. Additionally, by examining the path dependent dimensions of these plans, it would be possible to trace the decision-making processes, and consequently counteract some of these contextual challenges.

With our research question and the three sub-questions utilised in chapter 5 in mind, it will be achievable to conduct an analysis of how previous pandemics have participated in shaping the current Norwegian pandemic preparedness and crisis management. As further observed in chapter 5, the findings spoke to the fact that not only previous pandemic events have shaped the current pandemic preparedness or the health and care sector preparedness. If crisis management strategies are influenced by other sectors, or the preparedness in other sectors have contributed in shaping the pandemic preparedness in a central way, would

therefore need to be included in the analysis, as it provide us with required understanding to conclude on our research question.

6.1 CRISIS TYPOLOGIES

The crisis definition provided in chapter 3.3 is central in our understanding of whether an event can be defined as a crisis, or if it can be deemed as a complex emergency. Crisis that have transboundary dimensions, as a pandemic most often do, usually crosses both functional, geographical and political, and time boundaries. The Norwegian preparedness would therefore need to acknowledge these dimensions as a vital part of the preparedness, and consequently, they should be visible dimensions in the selected preparedness plans.

Functional boundaries are connected closely to cross-sectoral collaboration between organisations that normally do not interact, or with newly established organisations. The NHPP is the leading document on preparedness in the health and care sector, and provides instructions on how to carry out collaboration efforts between different actors and organisations, and the regulations and laws that guide each field. The NHPP cannot be said to be an operational plan, as it could not be directly applied “as is” in a health and care crisis. Additionally, it does not describe how cross-sectoral collaboration is to be carried out, trained for, or how coordination efforts is to be established in different crisis scenarios. The NHPP provides guidelines of which organisation is to report to other organisations, ministries, or directorates in a vertical pointing line, often ignoring horizontal organisational efforts. It reference other plans, instructions, or guidelines as part of the management of a specific case or organisation, which could be argued contributed to making the NHPP more complex than need be. Further, the ECDC¹² pointed out in their review of the Norwegian pandemic preparedness in 2008 that the preparedness plans would need to be operational in order to be fully able to manage future pandemics. Other plans, such as the PPI and the OSID have implemented this aspect in their strategies.

Crossing *geographical and political* boundaries is inevitable in the case of a pandemic, and international detect and respond systems is vital for the domestic management of the crisis. If the pathogen has the ability to spread rapidly between humans or/and animals, it would be harder to prevent it from spreading to more countries unless strict, internationally coordinated measures are implemented – which often would require local governments to

¹² The European Centre for Disease Prevention and Control, an Agency of the European Union.

initiate drastic measures based on very little information. International collaboration and crisis management is therefore a vital part of the domestic preparedness work. Norway collaborates with supranational organisations such as the WHO, NATO, and the EU, in addition to being part of a Nordic collaboration. The WHO provides guidelines and recommendations for managing infectious diseases, and provides tracking and report systems where countries share information with each other. The NHPP, PPI, and OSID addresses international collaboration, though they simply states the nature of the collaboration, and the role and mandate of each organisation. Each country is responsible for the domestic management of a pandemic crisis, but the WHO's Pandemic Influenza Preparedness Framework and the International Health Regulations (IHR) offers guidelines on the national crisis management, vaccine content, production, and strategies, and commits countries to measures, obligations, and report systems for communicable diseases of international concern – e.g. the MSIS¹³ and IHR regulation, and the 'HelseCIM'¹⁴.

The *time* boundary is the most impactful dimension when it comes to pandemics, as it is a slow, creeping crisis, and the pathogen can be hard to detect in its early phases. It is difficult to touch or see a pandemic crisis, but it is possible to observe the consequences and impact of the pathogen, which is in stark contrast to complex emergencies or disasters like mudslides, tsunamis, or earthquakes. These types of disasters or complex emergencies would also have a clear start and end, and when the event and the crisis management have subsided, the crisis would end¹⁵. The level of uncertainty would be higher in our efforts to determine exactly when a pandemic started, or when it ended, as the pathogen could still infect individuals or groups in the population years later. For instance, would it constitute as part of the pandemic crisis if the pathogen caused semi-permanent or permanent side effects in the population, that were present for weeks, months, or years after the virus was controlled? None of the five preparedness plans have estimated, or prepared for, a pandemic crisis that could last for several years or discussed the possibility that the side effects of the infection could be worse than the pandemic itself.

¹³ Report system for Infectious Diseases/ Meldingssystem for Smittsomme Sykdommer (MSIS) is operated by the NIPH.

¹⁴ The HelseCim is a crisis support system where actors can report and alert incidents to other hospitals or national organisations.

¹⁵ Even if a crisis have ended, a new crisis could appear in its place. One example is in the aftermath of the 2010 earthquake and following tsunami in Haiti, where the first crisis were the devastation of the tsunami, which was managed by the international community. When the sensed crisis was over, and the international community lost interest, new crises manifested, as they have been unsuccessful in rebuilding homes and critical infrastructure.

Having a common terminology and definition of events is a crucial aspect of good crisis management, as it is important that all actors are ‘on the same page’ in their communication in order to prevent delays in the response or that decision are made on a faulty understanding of the problem. Definitions and the understanding of a specific subject within crisis managements varies across sectors and organisations. Consequently, there is no good cross-sectoral terminology used in the preparedness planning, and different sectors have their own understanding of what “something” is. Terms regarded as important aspects in management strategies also varies within and between sectors, giving rise to the possibility that some sectors do not have an overall terminology that can be used in every possible scenario. This could cause cross-sectoral collaboration to become confusing or unclear, especially in a stressful and complicated situation.

The OSID is the only preparedness plan that dedicates a chapter to the terminology important for the plan, and in the preparedness against severe infectious disease. The AKS provides definitions on vulnerability, consequences, and uncertainty that serves as a general terminology for the preparedness strategy, in addition to an explanation to important terms and scenarios in each chapter. As the AKS is published by the DSB, hence being published within another sector, the terminology used differs slightly from the other plans, as they are created in the health and care sector. The PPI provides a short overview of definitions at the end, and the NHPP and CBRNE does not provide any definitions, and does not contribute to the establishment of a common terminology.

Observing that the goal for all involved actors in a crisis is to create a common understanding of the event, an effort should be made to create and include a common terminology in the health and care preparedness. All health and care preparedness plans, which are based on the guidelines set by the NHPP, appears to be written in their own context, and only reference other plans on areas that they are not intended to cover. The overarching framework for the preparedness plans, which connects the different preparedness plans together, appears to do so only loosely. One explanation for this might be because the plans are written at different times, and under different pretences. As there is not a yearly, common review of all the plans in order to correlate and align the content and the strategies provided in the plans, the information provided are at some points repetitive and unconnected to other strategies and plans. Even if the intention were that the plans could be understood as independent documents, they would still be insufficient in order to create a situational understanding in order to manage crises, as they rely too heavily on other plans in their

reasoning and explanations to be self-standing plans. Two possible solutions to the issue of a lacking common terminology could be to either incorporate definitions to the NHPP that would be sector specific, or to create a new document that aim to create a common cross-sectoral situational understanding of crisis and complex emergencies,

Creating a common, overarching framework that connects all the preparedness plans and that prevents unnecessary repetition, could greatly improve the Norwegian preparedness in the health and care sector. It would also allow the different plans to be more specialised towards specific events, in order to include several strategies that aim to manage a larger range of likely events. Additionally, information on a specific case would be more available to other sectors, actors, organisations, and municipalities, which oftentimes are tasked to create their own preparedness strategies. The definition of what constitutes a crisis should also be included in the crisis management plans, as it is not always apparent when an event is a crisis or merely a complex emergency. This, and creating other common definitions, would strengthen the Norwegian understanding of preparedness, and increase cross-sectoral collaboration as actors that normally do not collaborate or interact with each other would be able to easily familiarise themselves with the sector-specific terminological framework. This would as a result, aid in reducing the wickedness on the area.

Following the arguments made in the points above, preparedness plans usually come as a response to a crisis or complex emergency, where issues with the previous preparedness strategies are revealed during the crisis management. The current pandemic preparedness is based on experiences from previous pandemics, like the 2009 H1N1, 1918/19 H1N1, 1957 A/H2N2, and the 1968 A/H3N2 pandemics, seasonal flu outbreaks, the outbreak of Ebola in West Africa between 2014 and 2015 (in addition to the outbreak in 2018), and the Norwegian Ebola patient in 2014. The overall pandemic preparedness shows signs of self-reinforcing patterns, particularly in the time after the 2009 H1N1 pandemic, as management strategies in the plans follows measures implemented during the pandemic, and the learning points from the evaluation process. For example, the main strategy in the PPI is to vaccinate the population, in addition to measures used for centuries, like sanitary measures, quarantine, and isolation of the infected. The vaccination strategy worked well during the 2009 H1N1 pandemic, as it was possible to produce a large quantity of vaccines within a short time period. However, that might not be the case for future pandemics. The emergence of new pathogens, anti-vaccine movements, and production issues might affect the effectiveness of this strategy. These issues will be further addressed in point 6.3.

Climate change and increased human activities in nature have created the perfect climate for new infectious pathogens to emerge and spread, and which could later turn out to become epidemics or pandemics. The preparedness plans that mentions climate challenges, usually point to antibiotic-resistance, foodborne diseases, the challenge of climate-refugees, and changes in international trade as the main issues. None of the five preparedness plans used in this thesis connects climate changes and human activities to the increased possibility for new pandemics of un-encountered pathogens. Consequently, the suggested measures and strategies in the preparedness plans might not work on new pathogens, which would make the more specific plans like the PPI and CBRNE less useful to manage the crises. One of the issues of preparing for a certain type of pandemic is that it leaves little to no room for manoeuvre within the established preparedness strategies, as previous measures have been discarded in the path creation process and returning to them could be harder, if not impossible, further down the path. For centuries it has been known that the climate can affect the emergence and spread of communicable diseases (McMichael & World Health Organization, 2003), but this challenge is not prioritised or listed as a possible future threat in the preparedness strategies. One explanation might be that it would be too costly or too complicated to implement the climate aspect in future preparedness plans, and unless a path-breaking event occurs and the plans are forced to change, it is less likely for the main strategies of the plans to change. Since it is impossible to predict the next pandemic, preparing and training for a host of different scenarios for diseases that have been un-encountered or unregistered, could therefore become a time-consuming and pointless endeavour. In addition, when made in advance, preparedness plans will never be entirely relevant for the possible situations that might occur during a pandemic. Therefore, an approach that emphasises response issues and the processes in place might prove more useful than planning for specific events or provide a detailed description of the course of action, as they might not be applicable to manage new situations. However, the activity of writing the preparedness plans might still provide an overview of the overall preparedness, and provide valuable learning to the actors or organisations that are tasked to produce them.

Since the 2009 H1N1 pandemic, no other pandemics have directly affected Norway, which might explain the lack of urgency to improve the preparedness on the area. Additionally, as most estimates predict a new pandemic within the next 100 years, there is no immediate sense of threat, as the possibility of a pandemic occurring could be decades from now, which does not require immediate action by the current government. Hence, as several

policy areas do require immediate action, the government would need to prioritise whether to make improvements on a current problem, or prepare for a future problem.

It is impossible to predict how the next pandemic is going to present itself, and due to this uncertainty, relying on what is already known might be the most cost-effective and simple approach for pandemic preparedness. The process of creating ‘good’ preparedness strategies are bound to be coloured by a degree of wickedness, as some of the measures are based on previous “quick-fixes” or provisory solutions that were implemented spontaneously to manage a specific problem.

6.2 CRISIS MANAGEMENT AND THE OVERALL PREPAREDNESS

How crisis management and preparedness is understood determines the measures suggested in the preparedness plans. The NHPP, CBRNE, and AKS have an ‘all-hazards’ approach to the preparedness, which means that they take into account several imaginable kinds of crises, while the PPI and OSID present a specified preparedness approach that plan for one ‘kind’ of crises. It is important for the ministries and directorates to create plans that are able to manage a wide range of possible crisis, but they also need to prioritise crises that are estimated to be most likely to occur. Much of the content in the five preparedness plans overlap with other plans, and an argument could be made to support fewer plans, or that much of the content of these plans could be revised and collected into a more comprehensive plan. As many of the plans have been revised or established as a response to previous crisis, they could have created a situational understanding that does not correspond to other plans or to guidelines. Additionally, when there is no yearly revision of the plans, despite it being called for in white papers, NOUS’s, government documents, and the preparedness plans themselves. Not conducting regular revisions could lead to outdated strategies and information, as better understandings of the possible threats might have emerged, and older strategies could be providing contradictory measures or strategies from the newly established or updated plans. The most notable example of this is the PPI, which have not been updated since 2014. One of the possible explanations for why the plan have not been updated for seven years, could be because there have not been any new outbreaks of pandemic influenza in this period. As mentioned in chapter 5.6, the PPI was updated after the 2009 H1N1 pandemic, and was based on the collected information and learning points during the pandemic, in addition to the updated WHO pandemic phases.

Even though personnel, infrastructure, and preparedness plans are vital parts of the structures in place to ensure readiness, crisis management is not a static exercise: frequent training exercises and testing that could lead to the improvement of the preparedness plans and strategies, are necessary in order to detect flaws in the overall preparedness. If the NHPP is to remain an overall framework, and not an operational plan, it needs to address the issues of *how* collaboration and cooperation is to take form, both horizontally and vertically. It would also need to be supplemented with plans that are operational, as quick responses and flexibility are vital in crises or complex emergencies. In order for the NHPP to be a functioning, operational preparedness plan that can manage crises on its own, it would need to not only include the actors and measures designed to enable responses, but include a full range of recovery activities, mitigation strategies, and preventative measures.

Annual or regular training exercises are part of the recommended measures in many of the preparedness plans, government documents, white papers, NOU's, and in the general preparedness guidelines to improve the overall preparedness. On a local level, regional hospitals and municipalities have the responsibility to carry out these exercises as part of their preparedness. On a national level, the national health preparedness exercise is one of the measures to further preparedness, as mentioned in the NHPP, and is to be carried out every second year. The most recent one being the NATO military exercise Trident Juncture in 2018, which was a cross-sectoral collaboration with the military and other governmental organisations and NGOs (see: Helsedirektoratet, 2019b, pp. 5-6). The health preparedness exercise before that was the IKT16 that were held in 2016, which focussed on cyber security (see: Helsedirektoratet, 2016, p. 49), and the exercise in 2014 was set to aid Svalbard in the case of a shipwreck disaster (see: Helsedirektoratet, 2014, pp. 63-64). There was also an exercise in 2015, the HarbourEx15, which focusses on larger accidents on the harbour in Sydhavna/Sjursøya-area in Oslo (see: Direktorat for Samfunnsikkerhet og Beredskap, 2015, pp. 9-10). These exercises have mostly prepared for the management of complex emergencies, and not crises – following our definition of a crisis. The need for cross-sectoral collaboration could have – in the case of the 'health preparedness exercise' – prevented the health and care sector to properly prepare for crises that prioritises health and care related preparedness, while giving the perception that the overall preparedness on the field was improved.

In order for local actors to plan exercises based on the national preparedness framework, the plans would need to set clear guidelines on how such preparedness exercises

are to be carried out, and point out risk areas where the preparedness could be improved in order to ensure a good, overall preparedness in the Norwegian regions. As previous research has shown, it is impossible to prepare for a crisis as they present themselves as unknown unknowns, which makes general management guidelines and structures – in addition to training exercises – even more important. If a core structure of preparedness and communication lines is established, which could also be used on a day-to-day basis, in emergencies or disasters, or in crises, the crisis management could provide the necessary flexibility to instigate more case-specific measures across the country, while insuring a similar level of preparedness as regional actors are expected to manage their own preparedness.

The five preparedness plans mention the principle of liability, proximity, conformity, and collaboration as their core strategic framework in preparedness and crisis management. These principles follows the general preparedness in Norway, and are not specific for the crisis management in the health and care sector. The principle of liability, proximity, and conformity was introduced in the St.meld. nr. 17 (2001-2002) that came in the wake of the 9/11 terrorist attack in USA in 2001, which focussed on the challenge future terrorist attacks poses on society, and possible threats to the infrastructure in a societal security perspective. The principle of collaboration was later added to the core preparedness in Meld. St. 29 (2011–2012) and was implemented after the evaluation process of the 22nd July 2011 terrorist attack.

The principle of *Liability* states that the HOD is responsible for the overall preparedness on Norway, while it can delegate some of its mandate to HDIR. As the JBD has the role of the Leadership Ministry (LM) unless otherwise determined – as stated in the instruction on societal security (2017) chapter VIII – flexibility, situational understanding, and rapid reorganisation is required when the HOD is to take the role of LM in crisis that affect the health and care sector.

The principle of *Proximity* place the responsibility to manage crisis on the lowest possible level, which is the municipalities, public organisations, and regions. The NHPP and the regulatory framework states the line of communication and reporting, in a vertical line from a local level to a regional level, like the county and regional health authorities, and to a national level to the HDIR, DSB, JBD. Therefore, communication and information sharing with all other relevant actors and organisations becomes a vital part of this structure. The coordination efforts mentioned in the preparedness plans are structured in a way that comply with the theory of ministerial responsibilities and strong sector-based ministries, as it first and foremost addresses centralised, vertical coordination. The increased focus on centralisation in

crisis management came as a response to the poor management effort during the 22nd July terrorist attack, where the different actors were unable to collaborate or ‘find each other’. Oftentimes, decentralised strategies are more efficient in complex emergencies with fewer actors that collaborate and share information on a regular basis, than it is in catastrophes or crises that have a national or international aspect, because the complexity of the situation and the number of actors involved further complicates coordination across horizontal lines.

The principle of *Conformity* states that in a crisis, society needs to operate as similar as possible to the normal day-to-day operation, regardless of what it is exposed to, and to ensure that the ordinary lines of responsibility are fixed. The preparedness plans follows this principle in their strategies, and take into account that newly established organisations are to follow the same guidelines as similar organisations in a crisis. For instance, hospitals are expected to operate as usual during a crisis, treating non-infected patients as they would normally do, as well as infected patients. However, this is a challenging task, and the hospitals are at risk of being overwhelmed by the increased pressure by infected people. Resources might also be scarce, like PPE and healthcare personnel. This applies for all other organisations as well, as people can get sick and having to be in quarantine or isolation, which can create a lack of workers that can execute their tasks, creating delays or postponements of services or projects. Budgetary issues might force the employer to temporarily lay off people or terminate contracts. Though the aim to operate as one would in ‘normal’ situations might be a good principle in theory, it would almost certainly be impossible to follow in practice, as the situation would require improvisation and flexibility. National and local measures could also inhibit organisations to carry out their day-to-day task in an effort to stop the spread of the pandemic.

The principle of *Collaboration* is to ensure that organisations collaborate with other similar organisations in their preparedness, crisis management, and prevention strategies in order to better utilise cross-sectoral resources. Collaboration is more efficient between organisations or actors on the same ‘level’, as they often have the same preconditions and resources available. In a pandemic, municipalities in close proximity can cooperate on measures to shield or manage the spread in the region, and regional health authorities can share information with each other, or help relieve some of the pressure should one hospital be overwhelmed by infected patients. On a government level, ministries and directorates can for instance collaborate by either taking on responsibilities to reduce the risk of contagion, collaborate through knowledge sharing, or by creating cross-sectoral strategies, that provides

a more holistic approach to crisis management and preparedness. This form of collaboration happens horizontally. The CBRNE plan was, as an example, developed in a cross-sectoral collaboration between HOD, JBD, and the MD. Noted, the plan still divides the responsibility of the different categories between the ministries, in order to ensure sectoral responsibility. The NHPP also lists collaboration areas, and structures lines of communication and coordination between the different organisations. Horizontal coordination is encouraged, but the current Norwegian preparedness is based on vertical coordination, with top-down decision making, in strong sector ministries, which came as result of the 22nd July 2011 terrorist attack and the new governments'¹⁶ election platform to improve the area of societal security. Consequently, horizontal coordination would be more challenging to establish and carry out within this preparedness framework.

Cross-sectoral collaboration and coordination efforts are stated as a goal in the preparedness plans, but whether these instructions are trained for or implemented in exercise events before a crisis occurs, and not merely planned for or described, varies. According to the principle of liability, the government is not the sole responsible actor for preparedness. Both private and public organisations and private citizens have a responsibility to ensure their own safety, as those who have a responsibility in everyday situations also have the best conditions to manage a complex emergency. The reason for this is that, oftentimes, on-site civilians carry out a large share of search and rescue activities, first aid efforts, and other initial responses before the emergency response teams arrives. Civilians also constitute a large number of the voluntary response efforts across the country, and can take the form of unstructured civilian responses to an event, *ad hoc* organisations created in response to an emergency, or as members of an NGO. Examples of these structure are people in close proximity to the event such as in a car crash, temporary searching groups established to search for missing people, and NGOs like the Red Cross or Amnesty International that provide national and international aid. All actors that operate within this system of preparedness and management rely upon coordination and collaboration, in addition to an awareness of how they fit into the system.

However, managing a crisis that affect a large number of geographically dispersed people requires better coordination and collaboration strategies, either horizontally by regional actors, or vertically by national actors. Ideally, collaboration happens both vertically

¹⁶ The Conservative Party won the election in 2013, and after a second win in 2017, are still the ruling party in Norway until the next election in the autumn of 2021.

and horizontally, but due to strong sector-ministries, this endeavour becomes more complex in large crises. In the beginning of a crisis, the situation is characterised by complexity, confusion, and uncertainty, and a need for information in order to create an image of the situation becomes vital (Ansell et al., 2010; Boin et al., 2017; Head and Alford, 2013). In these instances, horizontal coordination might prove to be an insufficient endeavour, as the multiple actors have not yet formed a common, clear understanding of the situation. This can cause policy areas to fall between fields of responsibilities, which makes them ‘no-ones’ problem. In the health and care preparedness, the overall responsibility of coordination lies with the HOD, and HDIR is tasked to carry out this effort. Cross-sectoral collaboration occurs between the JBD and the DSB, and other directorates that varies between the types of crises. The structure of this collaboration is established in the NHPP, and applies to all other preparedness plans.

Collaboration and coordination efforts on a national level in the case of a pandemic usually happens between the HOD, HDIR, and the NIPH, where HOD has the overall responsibility, the role of the HDIR is to coordinate, and the NIPH is tasked to provide information and advice to the former organisations. In addition to the health and care sector, the JBD is responsible for the general coordination in the area of social security, and have established the Instruction on Societal Security, that guide the general preparedness and crisis management, along with the role of all involved actors and organisations. The DSB supports the JBD in its coordinative efforts on the area of societal security, and is tasked to attain an overview of risks and vulnerabilities, of which could be expose the society. Collaboration between these organisations might prove to be confusing in stressing situations, especially if the guiding principle of collaboration varies from one situation to the next, they have different understandings of their mandate or role, or if the NHPP cannot be utilised in an operational cross-sectoral preparedness framework.

As previously mentioned, the cornerstone of the Norwegian preparedness are the four contextual principles, which is applied to all sectors and areas that deal with societal security and preparedness. The principles came as a response to the previous management experiences with terrorist attacks, and in the health and care preparedness, this becomes painfully visible as exercises have largely focussed war and terrorism on a national level the last couple of years. No cross-sectoral large-scale pandemic or epidemic preparedness exercises have been trained for in recent years, despite being named one of the most likely and impactful events that could occur in the next decades (Direktorat for Samfunnssikkerhet og Beredskap, 2019).

The general preparedness and crisis management in Norway is predominantly based on experiences made from previous crisis like the 22nd July terrorist in Norway, the 9/11 2001 attack in the USA, and the Sumatra–Andaman earthquake in 2004. Consequently, this has caused the general pandemic preparedness to be based on principles established after terrorist attacks and natural disasters. Strategies that are specific to pandemic and epidemic outbreaks are based on experiences from 1918/19 H1N1 pandemic, which acts as an unlikely worst-case scenario, and learning points from the more recent 2009 H1N1 pandemic. In order to analyse this process, the path dependency in the preparedness plans would need to be addressed.

6.3 INFLUENCE FROM PREVIOUS PANDEMICS

The modern framework of preparedness plans in the health and care sector can be traced back to the first NHPP from 2007, with the exception of the PPI. As described in chapter 5.3, the first NHPP came as a response to a the failed coordination and collaboration in a natural disaster abroad, while experiences made in the second edition from 2014 came from natural disasters, terrorist attacks, and the 2009 H1N1 pandemic. The third update was based on increased immigration concerns, terrorist attacks, and international epidemic outbreaks. The second edition of the NHPP focussed more on pandemic management than the third edition, which could be explained by a need to update the plan in the aftermath of the 2009 pandemic. In addition, pandemic preparedness would have been on the agenda as experiences and learning points from the recent pandemic was still fresh in mind. The most recent PPI was published after the second edition of the NHPP in 2014, and included changes and experienced made from the 2009 pandemic. As the three first editions of the PPI were created before the establishment of the NHPP, and the third edition was not updated before 2014, the PPI could be viewed as an independent plan that operated besides the NHPP in the period between 2006 and 2014. They followed the same general preparedness and crisis management principles in this period, but the PPI did not mention the NHPP as the framework for the overall health and care preparedness. Therefore, the 2009 pandemic might have been a critical juncture where the PPI was officially included in the NHPP framework, as the PPI did not reference the NHPP framework before its update in 2014.

The fourth update of the PPI was originally intended to be published between 2008 and 2009, as much of the work had already been done after input for revision of the third edition (Direktorat for Samfunnssikkerhet og Beredskap, 2008; 2010, pp. 35-36). However, as the 2009 H1N1 pandemic reached Norway in this period, and the HOD and other directorates

and government organisations had yet to approve the plan, the fourth edition was not implemented as a management framework during the pandemic. In 2013, Meld. St. 16 (2012–2013) on pandemic preparedness was passed in the Storting (see Table 2, p. 54), and the fourth edition of the PPI was published the following year. Therefore, the pandemic might have delayed the publication of this fourth edition, so much so that it took seven years before it the PPI was updated, from 2006 to 2014.

The NHPP is the central plan in the health and care crisis management framework, seen as all other preparedness plans in the health and care sector follow it, and have incorporated it into their framework. The NHPP is a framework for collaboration and cooperation within the health and care sector and across various sectors, but it is not an operational plan, which makes it hard to utilise the plan in a crisis. As previously mentioned, the general preparedness in Norway is to a large degree based on learning points from previous terrorist attacks, accidents, and natural disasters or complex emergencies. This general preparedness is included in the health and care preparedness and crisis management, as it encompasses previous situations that have required cross-sectoral collaboration with the health and care sector. Preparedness specific to the health and care sector, like pandemic preparedness, is based on specific events that cannot always be transferred to events that appear to be similar, but in reality are too different from imagined crisis scenarios. Consequently, if it turns out that the general preparedness and crisis management strategies are inapplicable on several health and care crises, the NHPP could be insufficient in managing future pandemics or crises. If the NHPP presents a flawed framework or is based on inadequate principles to manage health and care specific crises, that could have a massive impact on the preparedness and crisis management for the entire sector, as all other preparedness plans and strategies build on this framework.

The most prominent events that affected the pandemic preparedness in the last two decades were the 2009 H1N1 pandemic and the Ebola patient in 2014. Both these events led to changes in the pandemic preparedness, and experiences from these events could be viewed as critical junctures in the Norwegian preparedness (see Figure 4, p. 88). In the three first versions of the PPI, events such as the 1918/19 H1N1, 1957 A/H2N2, and 1968 A/H3N2 pandemics, seasonal flu outbreaks, and SARS in 2003 influenced the pandemic preparedness. The 1999 WHO pandemic plan also called for the need for all member states to create their own pandemic preparedness plans, and this plan was in 2005 replaced by the WHO influenza

preparedness plan, as emerging new technologies made it easier to detect pathogens, create, and manufacture vaccines.

After the 2013 election where the Conservative Party and its supporting parties won, they launched their political platform for the following year – the ‘Sunnvoldplattformen’ of 2013. This platform had an increased focus on improving the national preparedness, as the Gjørvt-kommisjonen had handed the NOU 2012: 14 (2012) to the prime minister the previous year, emphasising that the Norwegian preparedness was insufficient to manage larger crises (Statsministerens Kontor, 2013, pp. 5, 17-18). The five preparedness plans in this thesis were all created or updated after the regime change in 2013, and are the result of the current government’s focus on increasing the Norwegian preparedness and crisis management.

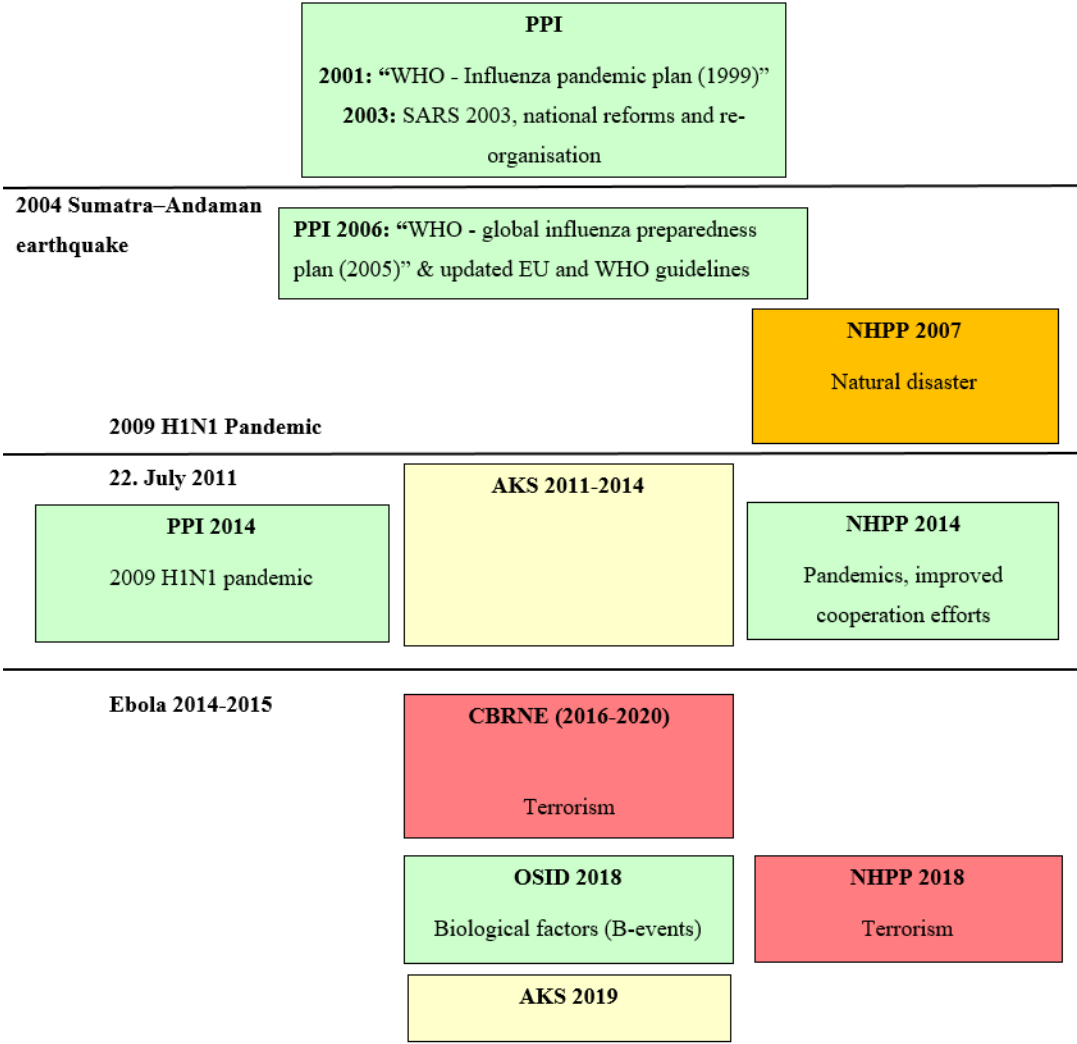


Figure 4 Changes in the preparedness plans and four critical health and care related junctures that have influenced the pandemic preparedness.

This process tracing study can be summarised in Figure 4, that show the creation or updates to the preparedness plans in relation to four critical junctures that occurred in the last two decades. It is divided into four colours: green is most influenced by pandemics, mustard is most influenced by natural disasters, red is most influenced by terrorism, and light yellow have no prominent event as its influence. The boxes are listed chronologically, in order to highlight when the different plans were implemented, and how they stand in relation to the other plans in time. It starts with the PPI, which came in 2001 and was updated in 2003, and 2006, as well as the first critical juncture that was the Sumatra–Andaman earthquake in 2004. As demonstrated in the Figure, all of the plans was revised or implemented into the overall preparedness framework after the 2013 election, which speaks to the political ambition of the current government.

Displayed are four of the most notable critical junctures that shaped the health and care preparedness, and by extent the pandemic preparedness, which is the Sumatra–Andaman earthquake in 2004, the 2009 H1N1 pandemic, the Ebola patient in 2014, and the 22nd July 2011 terrorist attack. These events varies in size and reach, from only one person being directly affected, to a whole country, both domestically and internationally. Nonetheless, their impact on the Norwegian crisis management and preparedness remains prominent.

The Sumatra–Andaman earthquake in 2004 was the wake-up call for the health and care preparedness in Norway, especially when it came to cross-sectoral collaboration and crisis management abroad. Poor coordination and collaboration efforts in treating and taking care of Norwegian citizens abroad shed a light on the lacking preparedness on the area. Because of this disaster, the NHPP was created as a tool to ensure better collaboration across sectors, such as between the HOD, JBD, and the MFA, who were central actors in this disaster.

Experiences and decisions made during the 2009 pandemic created an increased focus on pandemic preparedness, and successful choices made during the pandemic would later find their way into the overall preparedness against communicable diseases. Examples of this can be observed in the vaccination strategy in the OSID and PPI, in addition to several best and worst case scenarios of pandemic outbreaks. The 2009 pandemic would influence our view of how a pandemic could (or would) look like in the future, which is why most pandemic scenarios are on pandemic influenza, and not on other types of communicable infections.

The Ebola patient of 2014 is the only confirmed case of Ebola in Norway, but the preparedness in advance of this patient's arrival was still extensive. The fear that volunteers and healthcare personnel that travelled to West Africa to assist in the medical treatment, would later return whilst carrying the virus, started the process to create a more comprehensive strategy to prevent them from infecting others upon their arrival. This led to the creation of the interim Ebola preparedness plan by HDIR, in addition to influencing the preparedness strategies in the OSID, NHPP, CBRNE, and AKS. A review of the evaluations from the 2009 pandemic and the Ebola epidemic made by the DSB in the AKS, pointed to the need to be better prepared for future B-events, and that fixed, formal structures for collaboration in the preparedness, management, and prevention strategies is necessary, both within sectors and cross-sectoral.

Not only pandemics have shaped the pandemic preparedness and crisis management. Even though the terrorist attack on Norway did not have any direct impact on pandemic preparedness, it changed the way in which crisis management and preparedness is viewed, in addition to the guiding principles in all preparedness efforts. The evaluation process after the terrorist attack created a wave of increased centralisation, reforms that renewed coordination and collaboration efforts amongst first responders and in the regional division in Norway, and further solidified the contextual principles in the Norwegian preparedness.

Successful measures implemented during a crisis would later follow positive feedback self-reinforcing patterns, which could make future decisions path dependent, as these four critical junctures have shown. If successful measures and decisions made during stressful situations are continued, and given the opportunity to solidify through repeated repetitions, reversing the created path might be impossible in order to implement a more favourable strategy or measure. This could be the case with the new municipal reform that was implemented in order to create a more centralised base of operations in order to promote a larger, more efficient, and professional environment that was better equipped to respond to emergencies or crisis. However, even though many are opposed to this new form of structuring public organisations, reversing the decision might be hard, if not impossible, because it is based on previous decisions and experiences.

In the case of pandemic preparedness, the five preparedness plans provide some insight on the path dependency of strategies and measures that are used to regain control of pandemic pathogen. To reduce the infection rate, the main strategy is to provide vaccines to the majority of the population. The 2009 pandemic is one of the more recent reasons behind this strategy,

due to the success vaccinations had on striking down the virus. Regardless, if a situation occurred where it would be impossible to create vaccines, the plans would provide no alternate solution to end the pandemic. In addition, the strategies to manage the pandemic in the PPI and the OSID does not take into account that other factors can be just as harmful as the pathogen itself, like quarantining or isolating people for a long period of time, and the long-term psychological damages it can cause. Generally, the Norwegian pandemic preparedness is based on historical pandemics, where the 1918/19 H1N1 pandemic is seen as a worst-case scenario. This worst-case scenario is viewed as unlikely to happen, due to a higher standard of living, available medical treatments, and improved sanitary conditions. With the emergence of new technologies, creating new vaccines or mass-producing vaccines is now possible within a short period. Nevertheless, it would still be necessary to be previously familiar with the pathogen in order to start vaccine production, which can prove to be a challenge in future pandemics, especially if there is no prior experience with the pathogen. One example of this issue can be found in the chapter in the OSID that address vaccines and vaccine strategies, which does not mention scenarios where vaccines would not be available, either due to production difficulty or if they for some reason were not available for specifically Norway.

There is an assumption that vaccines would be readily available soon after the start of the pandemic in the preparedness plans that tackles vaccine strategies. The World Health Organization (1999, p. 32) wrote in their pandemic influenza preparedness plan from 1999 that “[...] the situation in 1997 also indicated that assumptions about ability to make vaccine against a new virus must allow for the possibility of a strain that has biological properties which hinder the use of traditional vaccine production methods”. Despite the advancement in vaccine production since this statement from the WHO, the issue is still a cause for concern. Vaccination strategies have become the only method in order to get rid of the pandemic, which means that other methods are discarded or deselected. The PPI includes experiences from the 2009 pandemic in its vaccination strategy, as it was one of the biggest vaccination accomplishment in Norway. Nonetheless, the plan was drafted seven years ago and consequently, it fails to address new societal challenges, like the growing distrust in vaccines around the world, false information about vaccines, international trade restrictions and delivery issues, and challenges related to mass-production of vaccines and PPE.

After the 22nd July 2011 terrorist attack on Utøya and the government block, the general Norwegian preparedness and crisis management strategies were updated in order to counteract

future attacks. One of the main changes to the overall preparedness was the increased focus on cross-sectoral collaboration and coordination. Similar changes were implemented in the health and care preparedness after the Sumatra–Andaman earthquake in 2004. However, these changes were not sufficient in order to collaborate during the terrorist attack, or alternatively, they were not sufficiently implemented or trained for in advance. Hence, the general preparedness required and update.

One of these updates was the strengthening of the contextual principles, which are prominent in all areas of public preparedness. Responsibilities were further accentuated, similarly as the role of involved actors and organisations. Measures to strengthen collaboration and coordination across and within sectors was emphasised in the preparedness plans that came in the following years. These principles can be regarded as having been ‘locked-in’ in the Norwegian preparedness strategies, as there is not one single plan that does not follow these principles. As the final step of the path dependency process, this lock-in might have crated the preparedness strategies to lose its ability to be flexible and to improvise, particularly in scenarios that fall outside of the planned preparedness.

In order to demonstrate the possible challenges the lock-in have caused when it comes to pandemic preparedness, a short examination of some of the implemented measures at the beginning of 2020 becomes necessary. Following the principles of liability and proximity, the responsible actors in the beginning of the Covid-19 pandemic were local authorities, such as municipalities and county officials. As the Corona virus had reached Norway, municipalities were left to their own device to make decisions and instigate measures, as national health authorities did not provide clear communication to the municipalities nor the public. The advice provided by national health and care organisations such as the HOD or the HDIR was ambiguous, which caused varying practices for cancelling events and concerts, and understandings of how quarantine rules were to be enforced. For instance, Bergen banned indoor events with more than 1000 participants, while Stavanger set the limit at 500 participants. Several municipalities like Oslo did not put restrictions on the number of participants, while other municipalities hinted that birthday parties and family gatherings could be banned (see: Hovden & NTB, 2020; Otterlei, 2020). Managing a national crisis on a local level could prove to be impossible, seen as different actors could choose different strategies, creating unequal measures that could be seen as ‘unjust’ or ‘unfear’ by the population, reduce the degree of compliance to the measures, and as a result loose the legitimacy. In pandemic crisis, municipals should not stand alone and manage their own

preparedness, as the virus transcends national borders, and even more so regional borders. Measures and strategies would not be effective if everyone is doing ‘their own thing’.

The lack of communication between the national government and municipalities were also criticised in the beginning of the pandemic. All preparedness plans emphasise the need for good communication and information sharing in the beginning of a pandemic or crisis. Communication is a vital part of the local and national crisis management, as is the need for national government to take control of the unfolding situation. Precise and coherent advice should be present from the beginning, and the information need to be framed in a way that demonstrate a degree of control over the situation. Measures would also need to be well reasoned and coordinated, to ensure that everyone is fronting the same information.

The structures of crisis management could have caused a degree of uncertainty when it came to the roles of the involved actors, especially between national and local government as crises are expected to be managed at the lowest level possible. Combined with the need for clear and coordinated communication, national government might not have seen the usefulness of providing contradictory information to the municipals at this stage.

The pandemic crises management differ from other types of complex emergencies, disasters, or crisis, as it transcends geographical and political boundaries, functional boundaries, and the boundaries of time. Accordingly, managing a pandemic crisis should not follow the same principles as natural disasters or terrorist attacks, as pandemics does not follow the same restrictions as other crises have to abide by. The majority of all preparedness plans follow the principles of general preparedness, which came as a response to previous crises or complex emergencies. Preparedness plans are changed, updated, and revised after each crisis, as learning points from successful measures and mistakes in real-life events are experienced.

7 CONCLUDING DISCUSSIONS

The three phases of path dependency provided by Schreyögg and Sydow (2011) in chapter 3 of this thesis, are able to provide a perspective on the challenges that decision makers encounter in the process of establishing the Norwegian preparedness. In the preformation phase, previous choices can affect the range of possible future choices and this process is oftentimes happens unintentionally or is perpetuated unknowingly by the actors. When events in this phase reaches a critical juncture, new patterns will emerge and start to take form. As demonstrated in Figure 4, four critical junctures have notably influenced the Norwegian preparedness in the last two decades. Choices made during the crisis management in these disasters and crises would later affect the available future options in the preparedness, as measures and strategies that had proven themselves to be inefficient or harmful were discarded, and positive measures were continued. These experiences lead to the formation phase, where in the case of the 2009 H1N1 pandemic, the vaccine strategy would be one of the measures that gained acceptance and attention in the management of pandemic crises. Measures that were not as effective in managing the pandemic would face more challenges in becoming the dominant strategy in the updated versions of the preparedness plans.

Similarly, the 2011 terrorist attack in Norway would uncover poorly planned and trained for cooperation and collaboration strategies – both across sectors and within the sector. Consequently, measures that improved strategies that followed this new pattern of crisis management and preparedness would become increasingly more accepted than measures that reproduced other suggested paths or strategies that were influenced by older patterns, which can be viewed through the measures and focus areas mentioned in the white papers after the attack (Meld. St. 10 (2016–2017); Meld. St. 13 (2015–2016); Meld. St. 21 (2012–2013); Meld. St. 29 (2011–2012); NOU 2012: 14, 2012).

Then, as the lock-in phase occurred, the dominant patterns are solidified in the management strategies and preparedness plans. The creation of dominant paths after the 2011 terrorist attack and the 2009 pandemic can be demonstrated through the municipal reform of 2014 that centralised the Norwegian crisis management and preparedness, in addition to the updated version of the NHPP and the PPI in 2014. Similarly, the introduction of the fourth contextual principle after the 2011 terrorist attack, would further solidify the path of how and who is expected to manage future crises, and in what way such management strategies are to be planned and trained for.

7.1 MAIN FINDINGS

In order to increase the preparedness level in Norway, an effort has been made to improve the preparedness throughout the years, especially in the time directly after a crisis. Nevertheless, it remains uncertain whether the improved measures and preparedness documents have made Norway more prepared to competently respond to the next pandemic, as the actual preparedness level is revealed through exercises and real-life events. A host of measures and guidelines have been added to the pandemic preparedness in the last couple of years, such as the resources provided by the NIPH, HDIR, and other NGO's and non-profit organisations. Overarching, non-operational, and vague plans, in addition to case-specific plans, are not well equipped to manage unknown unknowns, as they either provide too little guidance in a crisis scenario, or have been rendered inapplicable to manage specific cases. Since the majority of the recent pandemic preparedness is based on experiences from the 2009 pandemic, the prepared scenario of the next pandemic is thought to be a new pandemic influenza. Vaccine strategies would be quite useful in this type of scenario, but vaccines might not be as effective if a different type of pathogen were to emerge, in addition to the fact that the creation of vaccines could prove to be more challenging, or even impossible when faced with a new type of pandemic pathogen.

The suggested measures for managing a pandemic crisis varies in the five preparedness plans, as they have different objectives and tasks to cover. The NHPP covers the overarching framework for preparedness planning and crisis management in the health and care sector, and the PPI and OSID address outbreaks of severe infectious diseases, i.e. pandemic influenza. The CBRNE was a temporary plan that was intended used until 2020, and is still in the revision and evaluation phase, meaning that no decision have been made to renew the plan, and finally, the AKS is a risk analysis that intended to point out vulnerabilities in society published by the DSB.

Improved cross-sectoral coordination and collaboration have been at the focus of the Norwegian preparedness since the 22nd July terrorist attack, which also becomes apparent in the health and care preparedness plans. The principles of liability, proximity, conformity, and collaboration are present in all areas of the Norwegian preparedness, and the improved focus on centralisation and vertical coordination have made it more challenging for organisations to take use of their flexibilities in a crisis situation. In the beginning of the Covid-19 pandemic, the contextual principles was to a lesser degree used in the crisis management (Per, 2020, p. 35), as centralised, standardised government regulations became more important than the

decentralised local flexibilities (Christensen & Lægreid, 2020b, p. 718). Chapter 3 demonstrated that it is possible to observe that horizontal coordination is an important aspect of good crisis management, especially in complex emergencies where actors and organisations have the possibility to cooperate with other organisations at the same level. The best way to manage a crisis of a national concern is by applying vertical coordination, whilst smaller disasters and complex emergencies are better managed horizontally. This approach was decided to be the most effective approach during the Covid-19 pandemic, as this crisis would require a common understanding of the situation in addition to common measures across the country.

Knowing the nature of the event and describing it in a way so that all involved actors understand the situation, is a crucial aspect of the overall crisis management. Using a common terminology could greatly improve collaboration and coordination efforts in the early stages of a crisis, where the information is scarce and the understanding of the situation is still unclear. However, as the terminology and crisis management strategies varies between different local actors, organisations, and government branches, it can create a system of overlapping and confusing preparedness strategies. The preparedness plans offer no attempts to provide a common terminology, and there is no commonly used guideline on the terminology, which is to be used across all areas of societal security and preparedness. In order to improve the understanding of the seriousness of the event, establishing a common terminology is central.

As it is impossible to predict the future, the best path forward would be to prepare for different future possibilities or outcomes. For that, Norwegian organisations and actors would require a wider scope of analysis of possible threats. Pandemics are inherently wicked, and as such, the aim should not be to seek out a solution to the problem, but rather create measures that reduce the risk and consequences of the infection. As of now, it is impossible to remove a pathogen from circulating through the population. However, it is possible to reduce the spread and lower the infection rate. Similarly as pandemics, terrorist attacks pose a wide range of challenges, as it is impossible to determine the source of origin, where the event is to take place, or the size, scope, and consequences of the attack. Yet, there is a host of strategies and structures in place for early detection and reducing risks if a terrorist attack were to take place in the future. Training and exercises events are held on a regular basis – both within organisations, sectors, and cross-sectoral.

For pandemics, Norway relies on international collaboration for early detection, prevention, and collaboration to for risk reducing systems. Yet, preparedness plans, exercises, and training events are mostly the responsibility of organisations and actors on the local level, and efforts taken on a national level have, as the corona pandemic have proven, been inadequate (NOU 2021: 6, 2021). Additionally, though the probability for a pandemic to originate in Norway is close to null it remains a possibility, and there is no measures or strategies in place to prevent a communicable disease to go from a local infectious outbreak to an epidemic, or in a worst-case scenario, a pandemic. Cross-sectoral training events have historically focussed more on terrorist attacks, war, or other types of hostile attacks, rather than on other crises, like environment or health crises. The increased threat of a possible new pandemic was not viewed as an urgent issue before the Covis-19 pandemic, as pandemics seems to have not been viewed as a possible imminent threat that would require an immediate response. There appear to be a minimal amount of uncertainty about the ability of the then current measures and strategies to manage, or have the capability to manage, possible future pandemic outbreaks, as the plans have shown.

One perspective that is important to bear in mind when discussing the creation of pandemic preparedness plans or preparedness plans in general, is that the process of creating the plans can provide opportunities for learning and reflection. Though Norway was not well prepared to face a pandemic crisis (Christensen & Lægreid, 2020a, pp. 776-778), and mistakes were made in the early phases of the Covid-19 pandemic, the overall trust in the government's ability to manage the crisis and the low number of conflict surrounding the implemented strategies and measures would provide crucial for the somewhat successful Norwegian response. Restrictions in Norway was gradually lifted, altered, or strengthened based on learning-experiences made throughout the pandemic (Christensen & Lægreid, 2020b), and this flexibility and improvisation was essential for how the crisis have been managed. By simply creating the documents, the Norwegian organisations and actors might have improved, even if the plans themselves were unable to guide specific measures in a specific situation.

7.2 ANSWERS TO THE RESEARCH QUESTION

As discussed in the analysis, learning points and experiences made from previous pandemics are not the sole contributor in shaping the pandemic preparedness and crisis management in Norway – other crisis and complex emergencies have influenced the content and structure of

the plans as well. So, in order to answer the research question – *“How have previous large-scale pandemic or epidemic outbreaks contributed to shaping the current crisis management and pandemic preparedness plans in Norway?”* – additional types of crises would need to be included in the explanation.

The most notable pandemics that have contributed in shaping the pandemic preparedness are the 1918/19 H1N1 and the 2009 H1N1 pandemics, and the Ebola patient in 2014. The 1918/19 pandemic is often used as a worst-case scenario of a pandemic, though noted that there is a small likelihood that a future pandemic will be as lethal due to increased sanitary conditions, availability of medical equipment and medicines, and international collaboration to develop vaccines. The 2009 pandemic provided a real-life test for the then current pandemic preparedness, and the vaccination strategy was regarded as the most successful vaccination effort in Norway of all times. These learning point have affected how possible solutions to end pandemic influenzas would come to be viewed, in addition to being how possible future pandemics were assumed to look like. However, it is not only pandemics that have affected how preparedness plans and crisis management strategies are structured and organised. Other path-breaking events that have affected the health and care preparedness, and by extent the pandemic preparedness, was the 2004 tsunami, the terrorist attack on the 22nd July 2011, and the 9/11 terrorist attack in the USA in 2001. These events changed the way in which preparedness and crisis management were viewed, and have as a result, affected the strategies of how Norwegian organisations prepare for future pandemic outbreaks. Such events have for instance increased the top-down vertical coordination efforts, introduced the contextual principles, and further strengthened the silos built by strong sector-ministries.

In the first sub-question, it is possible to conclude that when faced with path-breaking crisis such as the 2009 H1N1 pandemic and the terrorist attack on the 22nd July 2011, preparedness plans have had the possibility to change, as weaknesses in the strategies and preparedness are exposed during the crisis management. The development of new technologies and updates in international plans and frameworks also have an impact on the domestic preparedness and crisis management, e.g. the updated pandemic phases provided by the WHO were included in the 2014 edition of the PPI.

Additional aspects that could have been included in the Norwegian preparedness plans are climate changes and changing social structures, in addition to a better explanation for coordination and collaboration efforts. These issues could have contributed to creating and providing a better understanding of the overall preparedness in a contemporary context and

pointed to new areas of risk and uncertainty. A perspective on climate change would be a particularly important aspect to include in these plans, as the changing climatic conditions could affect the shape, size, and severity of the next pandemic.

Our second sub-question allows for the detection of a path dependent decision making in the creation of the pandemic preparedness in Norway. The pandemic preparedness is based on experiences made from centuries of preventative measures to counteract communicable and non-communicable diseases. Measures such as quarantine and isolation of the infected have been used and implemented in all new strategies to combat infection. Newer measures include improved sanitary measures and vaccines, along with medical treatments that use antivirals and antibiotics to reduce the severity of the infection. All these measures remain a part of the pandemic crisis management to this day.

As the preparedness plans are changed after a crisis has occurred, or the threat of a possible new crisis have emerged, they still follow the previously created path though new measures and strategies are added. Vaccines and quarantine of the sick are two paths that have shown to be working in the past, and it would be impossible to imagine a future strategy that did not include these two measures. There could be a more efficient way to stop the spread of the pathogen, but researching possible new strategies to prevent the infection rate from increasing, seems to be a futile exercise, particularly when the existing measures are known to work.

The last sub-question informs the ability to view the preparedness plans in a more structural perspective. The Norwegian crisis management is based on a framework that is applied throughout the different sectors and their management of societal security and crises. The management strategies are structured around the idea of a vertical, top-down coordination, and on the four contextual principles that have become increasingly more important in the overall preparedness. The different actors and organisations have some room for agency in their decision making in the management of a pandemic crisis, though the overall framework remains fixed, e.g. municipalities are tasked to create their own RoS-analysis, which still have to follow national guidelines to ensure a good, overall preparedness on the local level. As the preparedness is developed in a top-down manner, there is little room to improvise for local actors without going against the government implemented measures or breaking laws or regulations, such as the CCD, HSP, and the HCSA.

7.3 THEORETICAL PERSPECTIVE

This thesis is intended to be a contribution on the field of preparedness and crisis management, and the underlying path dependency in which management strategies find themselves, so to fully understand the basis for why certain decisions were made. In my opinion, the area of crisis management, crisis understanding, and preparedness would benefit from including a larger emphasis on historical processes, as it would further contribute to inform how crisis have been managed in the past, and how that has contributed to shaping the contemporary management strategies and measures. Previous events are influencing how security and crises are viewed and prepared for, as is the case for risk analyses, risk-reducing measures, in the creation of new infrastructure such as buildings or tunnels, or on strategies and legislation that increase the overall preparedness. Dedicating more attention on the longer lines of the historical aspects of crises would allow for more comprehensive analysis of possible risk factors that stretches beyond events that occurred in the recent past.

With the experience of using a result-explanatory process-tracing analysis, I would argue for the usefulness of analysing the connection between a combined political and historic perspective on crisis management and preparedness. Such a perspective can be fruitful in order to gain an understanding of the processes behind an event or phenomena – in this case, the creation of the pandemic preparedness plans, as it provides some insight on how processes are connected. The political perspective has been limited to the creation of political documents or policy, as mentioned in chapter 4.2, and has not been on party politics. The historical perspective is based on the historical lines of the Norwegian preparedness against communicable diseases, in addition to how the plans have changed and been developed over the last two decades. By implementing these two perspectives, it has been possible to draw longer lines in order to examine the path dependency of the preparedness measures, and to examine how critical junctures have caused lock-ins in the crisis management strategies. This could in turn provide more information on how the Norwegian preparedness is structured, and whether it is established in a way that allows it to manage future crises of unknown unknowns.

As mentioned in chapter 3, a second possibility for this process-tracing study would have been to perform a theory developing process-analysis, which aims at developing new theoretical perspectives. As the aim of this thesis was to analyse how preparedness came to be, and if and how previous pandemic and epidemic events had shaped the preparedness and crisis management, a larger emphasis could be made on the multi-level governance

perspective. This thesis includes some aspects of the multi-level governance perspective, such as horizontal and vertical coordination challenges and cross-sectoral collaboration, which implies that this perspective could be further emphasised without difficulty, as crisis are border-crossing events that can affect several sectors at once.

This thesis has revealed some issues with the Norwegian pandemic preparedness, as the framework for crisis management is based on several non-related previous crisis such as terrorism and natural disasters. By using path dependency as part of the theoretical framework, it has been possible to trace the preparedness strategies historically in order to observe how small situational changes in the crisis management have led to changes to the overall preparedness. An analysis of how one pandemic crisis like the 2009 H1N1 pandemic, led to changes in for example the PPI, could also have further emphasised a crisis management perspective, in addition to implementing a perspective that focussed on actors and decision-making. In another study, the five leadership tasks presented in Boin et al. (2017, p. 15) could have been utilised to generate an analysis on how decisions made in the early phase of the Covid-19 pandemic shows signs of management flexibility and improvisation.

7.4 PRACTICAL IMPLICATIONS

The focus on societal security have increased after the 22nd July 2011 terrorist attack, as it became apparent how unprepared the Norwegian government and the different sectors were to manage such a devastating crisis. Research on the field of societal security was in demand after the attack, as it has been revealed that there is a lack of studies on how government manage and learn from a crisis, and even more importantly, how they prepare for one. It has already been established that no crisis is alike and would therefore require organisational improvisation and flexibility to manage the crisis properly. In the case of a pandemic, which is a slow creeping crisis, cross-sectoral preparedness and training exercises are at the upmost importance, as they provide the only real support in order to manage the situation of unknown unknown and wicked problems.

By using path dependency-perspectives to explain how the preparedness plans were created and point to the events that influenced the measures and strategies in the plans, it would be possible to make informed choices on the path ahead, when the preparedness plans are to be updated again. It would also increase the understanding of how the specific measures

came to gain acceptance in the crisis management, in addition to why the specific measures were either continued or discarded based on their efficiency in previous crises. Perhaps this could allow for a discussion of the path the preparedness finds itself on and whether it is the most optimal path in order to face future challenges.

This thesis has only analysed five preparedness plans due to its limitation, but I will argue that it should still be a sufficient number in order to gain an overview of the overall preparedness in Norway. However, as the local government and organisations are tasked to create their own preparedness, the number of plans that were left out of this thesis is not that high – only a few other preparedness plans on a government level have suggested management strategies for pandemics, and most of those are risk analyses. On the other side, there are many plans that tackle specified strategies, like plans that guide domestic and international detection and response strategies, vaccination strategies, and strategies to ensure enough PPE and healthcare personnel. These plans were not included in this thesis, as they are unable to disclose information about the overall preparedness and the principles that guide it.

If there is an understanding of how the pandemic preparedness is structured, and on which principles the measures and strategies are based on, it is possible to create awareness of aspects that could change in order to improve the overall preparedness on the field. Due to the limitations of this thesis, several perspectives and theoretical explanation models were excluded, even though they could have informed an analysis of the research question and theme. The focus has mainly been on the national level, while some examples of crisis management on a local level have been included. Consequently, there has been a limited analysis of the horizontal coordination of crisis management, and local RoS-analysis and preparedness strategies, which could have furthered an analysis of the overall preparedness.

Second, by including crisis communication as a perspective in thesis, it would have been possible to analyse how communication between the different actors take shape during a crisis, which would further highlight the form of coordination – if it happens horizontally or vertically. It would have been possible to include the learning and evaluation phases, where it would be possible to analyse when the critical junctures appeared, and trace the process to the early phase of the path creation. Political processes and policy entrepreneurs could also have an explanatory power in providing a broader understanding of ‘who learned what’ and how those learning points would be used in future preparedness.

Third, the use of organisational theory could have been further emphasised, in addition to instrumental and institutional perspectives. The former focuses on the formal structures of an

organisation, while the latter focuses on the culture and the informal norms in organisations. These perspectives, though oftentimes overlapping, could have various explanatory powers within the study of crises. If the organisations were unable to change in the aftermath of the crisis, could they have the flexibility to adapt to a new crisis? By including the organisational culture, it could have shown whether there is a work environment that easily accepts change and constructive criticism, or if the organisation and actors are unable to make changes or discard their own work.

7.5 FURTHER RESEARCH

I have attempted to explain the processes of which the Norwegian preparedness and crisis management came to be and point to the factors that have shaped the measures and strategies throughout this thesis. As I have analysed the general, overarching pandemic preparedness, more research on the specific strategies i.e. vaccination strategies, would have provided a deeper understanding of the field of pandemic preparedness. As the Covid-19 pandemic appears to have reached its conclusion, a guess would be that the field of crisis management and decision-making during crisis will be dedicated a lot more time in the years to follow, as to increase learning on the field.

Further research on the area could be dedicated to the political aspects in the creation of the preparedness plans. As before mentioned, the preparedness plans have all been updated or created while the Conservative Party and its collaborators have been in charge of the policy in the government. A different possible other approach could have been on how the different political parties have influenced the specific measures in the plans: have the relationship between the parties affected the strategies, or have the main responsibility of creating the plans been placed on one party?

The division between larger and smaller municipalities would additionally be an interesting field for further research, as the geographical conditions of Norway could have affected whether the measures were mainly intended for larger cities like Oslo and Bergen, and whether this could have resulted in a poorer preparedness in smaller cities or towns. During the Covid-19 pandemic, it have become clear that national measures have not fully recognized the different infection rates throughout the country, and the measures each region would prefer to adapt to protect its citizens – like the quarantine requirement the northern

municipalities in Norway wanted to adapt in the beginning of the pandemic (Christensen & Lægreid, 2020b).

Even though there has been a low level of controversy in the early phases of the pandemic crisis management, there might have been political disagreements that never reached the public. In order to successfully manage a crisis, it is vital that the government is allowed to implement policy without too much political disagreement, especially in the early phases where there is a low accessibility to information (Boin et al., 2017), as it could further divide the population and reduce the overall willingness to follow the implemented measures. The other political parties did not interfere in the early phases of the pandemic and they did not criticise measures that were deemed necessary to reduce the risk of infection. However, at some point, they started to criticise some of the measures, and this point could be interesting to analyse for further research, as the conditions of the pandemic or the crisis management might have changed, or the motivation to defend the invasive measures could have been lost.

Other political controversies during the Covid-19 pandemic might also have influenced the measures and strategies during the pandemic, whether it be the legality of the measures or the usefulness of the strict strategies. Another aspect that would be interesting for further analysis would be if the health and care preparedness framework were equipped to manage the Covid-19 pandemic, as the preparedness was based around the assumption that the next pandemic would be of an influenza pathogen, and not an unknown pathogen like the Corona virus. By doing a quantitative analysis of the preparedness, it would be possible to create an overview of the different suggested measures and strategies, include more plans and risk analyses, and be able to compare them and draw generalizable conclusions on a bigger scale. Likewise, I have created an overview of how the plans came to be, and which factors influenced them, and I hope this may encourage future studies.

Such aspects would allow for the possibility that this thesis could be used as a framework for future discussions and research on the corona pandemic, alternatively on other pandemics. By this, it is my hope that I have provided a contribution to the field of preparedness planning, crisis management, and societal security in the health and care sector, with a particular focus on pandemic preparedness.

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