

UiT

THE ARCTIC
UNIVERSITY
OF NORWAY

Faculty of Science and Technology – Department of Engineering and Safety
A Story of Pigs and Bats

Comparative case study of pandemics as transboundary crisis in Norway and Western Africa

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*Master thesis in Societal Safety – Specialization in Safety and Preparedness in the High North
June 2016*

Number of words: 23 403



Acknowledgement

This master thesis constitutes the formal ending of the master program “*Societal Safety – Specialization in Safety and Emergency Preparedness in The High North*”.

I have through my years of studies gained a great interest for crisis management during emergencies that require multinational response. Pandemics are some of the most demanding type of crisis, because health penetrates the whole of society. It has been both challenging and rewarding to be able to write about this theme.

A big thank you is in order to Christer Pursiainen, and all the other teachers and personnel. Many thanks are also in order to my fellow student and friends for giving sound advice, guidance and constructive feedbacks during the writing process, and for being available in times of need. Some of them I have been studying with for many years, while some are new ones that I have become friends with, naturally. I wish you all the best in life, and hope that our paths cross many times in the future.

At last, I would like to thank my great family, and my dear Stine, who never got tired of my constant concerns during the writing period. Thanks for the support, motivation and everything else.

André Karlsen

Tromsø, 2016

Summary

The changing nature of crisis and an increased expectancy of pandemics sets the stage for many challenging crisis' in the future. Modernization and inequalities of a divided world also play a big role in this future, while organizational factors often are the ones being solely blamed for inadequate crisis management. A knowledge gap in combining crisis management literature with pandemic and epidemic response further complicates the ability to plausibly predict how health crisis unfold and should be managed.

The main purpose of this thesis is to explore, illustrate and seek a deeper understanding of pandemics through the lenses of crisis management. These lenses will tell the story of modernization, interconnectedness, governance, inequity, health systems, pig, bats, crisis management and an international harvester of blood.

The thesis has been carried out through a comparative case study of H1N1 influenza in Norway and the Ebola outbreak in Western Africa. Reports by the United Nations, the World Health Organization, external management assessors and some news sources have been analyzed through a theoretical framework on transboundary crisis.

Main findings include heavy reliance on the health sector, the World Health Organization as custodians of a crisis, international travel, deforestation, migration, land use, poverty and poor health systems create and facilitate pandemics, and solving a pandemic is in reality the solving of an epidemic in the diseased country. Furthermore, mechanisms for disease propagation, such as "deliberate uncertainty-making", challenges in mobilizing people, money and goods, stigma associated with being the host country of a disease, lack of awareness of the different international frameworks between the health and humanitarian sectors and the failure to establish an authoritative narrative in communicating disease, have been identified.

The fact that it only takes one infected child to almost force governments on their knees, launching national and international actions to combat an infectious disease, serves as a dire reminder of the importance in incorporating crisis management literature with pandemic and epidemic response.

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“We have to bring in the science and rigour of crisis management on top of the science of epidemic response. Otherwise the risk is of being run by scientists and doctors and not people who know how to run an emergency”.

Dr. Bruce Aylward, Special Representative of the Director-General for Ebola (*WHOe, 2015, p. 221-222*).

1.0 INTRODUCTION

This study will explore the relationship between the H1N1 influenza in Norway and the Ebola outbreak in Western Africa. The changing nature of crisis’ and an increased expectancy in pandemics sets the stage for many challenging crisis’ in the future. Modernization and inequalities of a divided world also play a big role in this future, while organizational factors often are the ones being solely blamed for inadequate crisis management.

Societies have always faced the risks of crisis, such as floods, forest fires, draughts and blizzards, some know examples even dating back 5000 to 6000 years (Quarantelli, Lagadec & Boin, 2007). As societies evolve they are introduced to new hazards and threats. Some come in the form of new technology, but maybe more important; some new threats and hazards arise from the interconnectedness we humans strive to achieve. By cooperating and growing interconnected we have accomplished wonders our ancestors would not even dream of, from harnessing the sunlight into pure energy, creating devices which potentially harbor all knowledge known to man, to being able to modify genetic materials for our own gains and so on. The list of human advances is endless. There are some backsides to this cooperation though – we are becoming more and more dependent on each other, and on systems and institutions to take care of us, especially when a crisis occur.

Many crisis management scholars have long been aware that crisis are growing more complicated as the interconnectedness of the world is increasing. Many attempts have been made to define this new nature of crisis. One of the earliest was done by Quarantelli, Lagadec & Boin (2007), where they speak of “*trans-system social ruptures*” (p. 27). Later, Boin & Rhinard (2008) coin the term “*transboundary threats*” (p. 6-7) and “*transboundary crisis*” (p. 4). One result of such interconnectedness is emerging new diseases, as well as the spread of old ones. All these diseases are caused by a pathogen, which (literally) means a microorganism that can cause disease (Gunn, 2013). A disease that is usual or has a constant presence in a given geographical area is labeled as an endemic disease, such as seasonal influenza (Gunn, 2013; Porta, 2008). When a disease breaks this barrier of normal prevalence in a geographical area, it is labeled as an epidemic, and if this disease spreads across international borders, it is labeled a

pandemic (Gunn, 2013; Porta, 2008). These pathogens have become exceptionally adapted at using humans as a resource for their own gain. Often they lead to the demise, or at least to the cause of negative health implications, for the host. In fact, epidemics and pandemics accounted for almost two thirds of all deaths from natural disasters between the 1900's and 2005 (Eshgi & Larson, 2008, p. 79). Recent mathematical modelling has shown that a disease could spread to all major global capitals within 60 days, and “*kill more than 33 million people within 250 days*” (UN, 2016, p. 26).

On average, pandemics appear every decade, but the frequency of global health threats is increasing (Ross, Crowe & Tyndall, 2015). More than 300 new communicable diseases are reported to have emerged between 1940 and 2004 alone (UN, 2016, p. 25). This growth is mainly caused by population expansion, older age, complex humanitarian emergencies, international travel, commerce, food processing, land use, and absent or ineffective health and surveillance systems (Noji, 2008, p. 226-228). Ross et. al. (2015) summarize that overpopulation and poverty are the main factors that contribute in creating better breeding grounds for epidemics and pandemics. Weak, malnourished urban populations in Low-and-middle-income-countries is where pandemics are most likely to originate from. The UN predicts that the world will double its urban population by 2050, to the amount of 6 billion, where most of this increase will happen in Low-and-middle-income-countries (Ross et. al., 2015, p. 90).

There is a large amount of research on pandemics (and epidemics) from a medical and biological point of view, aiming at assessing potential health implications (Adivar & Selen, 2013). In their review of 73 research papers, Adivar & Selen (2013) point out that control policies through vaccination and quarantine are the most proposed measures to respond to epidemics (p. 256). If the medical community, somewhat, agree on how to combat epidemics and pandemics, then why are epidemics and pandemics still mismanaged? While a virus is in fact the specific agent that is the cause of infection, that needs quarantine and vaccines to be rid of, it is important to also understand that a crisis is socially constructed and has sociopolitical dimensions (Boin & 't Hart, 2003, p. 545; Canton, 2007). A virus can have a fixed set of properties, but if you are infected in a nation with superb health system, it is not the same as an infection in a nation with a poor health system. Absent surveillance systems, for example, can easily result in further spread of the disease, and if the conditions are right, a crisis is being born.

The initial quote by Dr. Bruce Aylward highlights the need for a marriage between crisis management literature and response to global health threats. This is also corroborated by Carney and Bennett (2014), which review how pandemic management is framed, and concludes that a more socio-political nuanced response to pandemics are needed (p. 145).

Quarantelli et. al. (2007) maintains that it is more important to understand the conditions that can generate disasters and crisis, than it is to specify characteristics of the phenomena. Pandemics, and epidemics are first and foremost a crisis – not an illness to be cured. Of course, curing the disease is a big part of managing this kind of crisis, but there are still many other issues to be solved (e.g. uncertainty, surge capacities, coordination and public communication).

1.1 PREVIOUS RESEARCH¹

The literature on crisis management in relation to pandemics is very varied due to the interdisciplinary nature of a crisis. This is especially true when global health is concerned, as health penetrates the whole of society. In my review I read research papers from the past 30 years that had something to do with “epidemics” and “pandemics”. Three scientific journals regarding crisis management were chosen, bringing the total amount of research papers to 139. I did not include research from a medical point of view, because of the sheer amount of such literature, and because it has a different focus than crisis management research.

Most of the research papers in my review only mention epidemics and pandemics briefly and had other areas of focus. Of the 139 research papers reviewed, 101 were about other themes and 14 were not related at all. Some research papers that were about management of pandemics and epidemics were done so in the context of Western societies. I would argue that these are not quite transferable to developing countries. Many of the poorer nations lack the necessary infrastructure or systems to manage health threats from, and thus is in need of international assistance (Benini & Bradford-Benini, 1996; Noji, 2008). I did, however, identify a few research papers that propose overarching models for natural hazards crisis management, where epidemics and pandemics were mentioned briefly. As these models are not built around empirical studies on epidemics or pandemics, but for example tsunami (Moe & Pathranarakul, 2006) or flood (Moe, Gehbauer, Senitz & Mueller, 2007), I am reluctant to propose them as framework for pandemic and epidemic management.

¹ For a more detailed literature review, see Appendix 1.0

The most relevant research papers for pandemic and epidemic management are about transboundary crisis (Ansell, Boin & Keller, 2010; Boin & Ekengren, 2009; Boin, Rhinard & Ekengren, 2014; Hermann & Dayton, 2009). The main message from this literature is that threats are becoming international, and that local threats can eventually cross national borders because of the growing interconnectedness in society. There is also the identification of some main challenges for managing such threats: coping with uncertainty, providing surge capacity, organizing a response and communicating with the public. (Ansell et. al, 2010). As with any crisis, they require rapid response under conditions of uncertainty and stress (Rosenthal, Charles & ‘t Hart, 1989), and Ansell et. al. (2010) argues that this becomes even harder when a crisis is spread across geographical borders and policy boundaries, and when there is an involvement of many response actors.

The transboundary crisis theory does not focus on pandemics or epidemics explicitly, but it is meant to be a theory on crisis that have global proportions, and as such, pandemics are a part of these kind of crisis. Explorative research and discussion around the theory itself have been done, but this it is somewhat sparse (Ansell et. al., 2010; Boin, 2009; Boin & Rhinard, 2008; Galaz, Moberg, Olsson, Paglia & Parker, 2011; Olsson & Zhong, 2010; Quarantelli, Lagadec & Boin, 2007; Watchendorf, 2009). Much of this research highlight how societal interpretations and social settings are important for response in crisis. For example, in context of helping others outside of one’s own immediate group it ranges from no help at all to full help (Quarantelli et. al., 2007). The authors point out that in societies with great ethnic and racial differences, volunteering to help others outside one’s own circle is almost unknown (p. 32). The main point being that different culture can have various impacts on crisis management.

There is a substantial knowledge gap in combining crisis management to pandemic response. I did not identify any empirical studies on operative management of pandemics in the field. Neither could I identify studies where theoretical frameworks were applied to study these phenomena. As there currently is not much of a scientific debate or schools of thoughts regarding crisis management and pandemics, it shows that there is a need for going in depth and explore pandemics with the lenses of crisis management literature.

1.2 RESEARCH PROBLEM

The aim of my thesis will not be to generalize findings or provide predictions, but to “*explore, illuminate and seek understanding*”, as often is the aim in any qualitative research (Golafshani, 2003, p. 600). Taking note of Quarantelli et. al. (2007), I believe it is important to understand

that differences in culture can produce various differences in crisis management. I would argue that to illustrate such factors it is reasonable to compare the pandemic management in two very different cultural contexts. Also, as identified earlier, it is the poorer developing nations who will experience an increase in health threats. An exploration of management in such countries could be interesting to compare with management in nations that are more developed, to see how management challenges unfolds differently. Thus, the comparison will be between a highly developed Western society, Norway, and the three countries most affected by Ebola: Guinea, Sierra Leone and Liberia in Western Africa. These nations are some of least developed in the world (UN, 2016). The logic behind choosing Norway for comparison will be further explained in the discussion on case selection in the method chapter. The research problem captures the main essence of my aim in this thesis:

What different reasons for pandemics, and mechanisms for disease propagation, can be identified between the H1N1 influenza in Norway, and the Ebola outbreak in Western Africa?

In order to answer the research problem, I will first need to confirm that both the H1N1 pandemic and the Ebola outbreak are comparable. Second, there is a need for mapping the relationship between Norway and West Africa, and reasons for why the pandemic occurred. Further, a mapping of core challenges needs to be done. These challenges actively hinder the management of the pandemics, and in effect, serve as mechanisms for disease propagation. With this information, it is possible to give an overview of the mechanisms that can cause disease propagation, in Norway and West Africa, respectively. Because of these three needs I have broken down and operationalized the research problem into more specific research questions:

To what extent is the H1N1 influenza in Norway and the Ebola outbreak in Western Africa comparable?

What is the relationship between the reasons for the H1N1 influenza pandemic in Norway, and the Ebola outbreak in West Africa?

What were the mechanisms that made disease propagation possible?

My hopes are, in addition to providing in depth exploration on pandemics, that I can contribute in the uncharted area of crisis that cross international borders – or the “*terra incognita*” of a transboundary crisis, as Arjen Boin (2009, p. 375) labels it.

The Structure of the Thesis

To answer the research question, I will empirically investigate the World Health Organizations² (WHO) and the host countries' management of the Ebola pandemic, and compare it with the H1N1 influenza management in Norway. The comparison will be done through developing a framework of analysis, extracted from theory on crisis development and termination, why pandemics originate, and theory on the transboundary crisis. To the best of my knowledge, no study on pandemics with transboundary crisis theory as framework have been done.

A detailed method chapter will highlight some of the main challenges in case studies. Every research question will be discussed by comparing the differences between Norway and the West African countries, with the aim of highlighting the research problem. In the end, I will provide an overview of the main differences identified between Norway and Western Africa.

2.0 THEORY

This chapter aims to give a quick overview of how a crisis can be scaled, highlight a problem with the WHO and timeframes, and give an overview of core challenges. In the end I will present some common question that is derived from the theory, which constitutes the analytical framework for this thesis.

Ansell, Boin & Keller (2010) have developed a framework that identifies some key concepts and challenges for managing transboundary crisis. A crisis can be explained with a perceived threat against core values or life-sustaining functions of a social system, which requires urgent response under conditions of uncertainty (Rosenthal et. al., 1989). A transboundary crisis can, in addition to Rosenthal et. al. (1989), be characterized like this: *“they affect multiple jurisdictions, undermine the functioning of various policy sectors and critical infrastructure, escalate rapidly and morph along the way”* (Ansell et. al., 2010, p. 195).

2.1 THE TRANSBOUNDARY SCALE

A crisis can be put on a “transboundary scale” based on three dimension. The higher the crisis score on each of these dimensions, the more transboundary it becomes, and the more difficult it becomes to manage (Ansell et. al., 2010).

The first dimension is related to whether a crisis can move vertically and horizontally regarding responsibilities and management. If, for example, lower levels of government are overwhelmed,

² Why the WHO? See Appendix – 2.0

the local authorities may need resources from higher up, thus the crisis move vertically upwards (Ansell et. al., 2010). The crisis can also spread horizontally across political jurisdictions on the same level of government. The second dimension involves the ability a crisis has to jump into, or between different sectors, or functional borders. For example, a crisis can jump from only affecting the industrial and transportation sector, and into sectors such as financial, health or electricity. The third dimension relates to the timeframe of a crisis. Many crises are clearly defined by a beginning and an end, however some crisis has deep roots and must be managed for years before sufficiently being dealt with (Ansell et. al. 2010).

There is something special in international health regarding a crisis' timeframe though. The WHO is the authority on framing a health threat as a "Public Health Emergency of International Concern" (WHO, 2011). As such, they are also the authority on defining the timeframe for the crisis. This could make the data collection and discussion around timeframe to be only centered around what the WHO define as a crisis, and not what crisis management theory could provide instead. Because of this I created a subchapter on its own, where I use alternative theory to revisit the notion of timeframe for a crisis.

2.2 TIMEFRAME REVISITED

To understand how a crisis developed, we have to look at its (most probable) source. As mentioned in the introduction: overpopulation, older age, poverty, food processing, land use, international travel and absent or ineffective health and surveillance systems are the main factors that contribute in creating pandemics (Noji, 2008; Ross et. al., 2015).

Hart & Boin (2001) have developed a framework for different typologies of crisis. These typologies can mainly be divided in four:

- 1.) The fast-burning crisis – This kind of crisis has an instantaneous development, and an abrupt termination.
- 2.) The cathartic crisis – A crisis that develops slowly, but has a quick termination.
- 3.) The slow-burning crisis – Develops slowly, and is also gradually terminated.
- 4.) The long-shadow crisis – As with fast-burning they develop quickly, but they are very slowly terminated.

Hart & Boin (2001) emphasize that crisis can be within more than one category, from what perspective one chose to look at the crisis from.

2.3 CORE CHALLENGES

When a crisis has been defined as transboundary, one can identify four core challenges. These are common in any crisis, but are more challenging in crisis that are transboundary (Ansell et. al., 2010). These challenges are mainly divided into: coping with uncertainty, providing surge capacity, organizing a response and communicating with the public.

2.3.1 COPING WITH UNCERTAINTY

Rosenthal, Boin & Comfort (2001) states that a defining characteristic of any crisis is uncertainty. This uncertainty is related to the specific nature of the threat, to peoples initial and emergent response, the dynamics of the situation and to the future consequences of the crisis. Ansell et. al (2010) categorize uncertainty in three different forms:

- Uncertainty about the source of the problem.
- Uncertainty about the evolution of the problem.
- Uncertainty about possible solutions.

2.3.2 PROVIDING SURGE CAPACITY

When the response organizations are pushed beyond their normal resources, they often need an increased capacity for response (Ansell et. al., 2010). While this seems like a very overarching statement, one can identify some main capacity needs, at least when health is concerned. In any health crisis there will be extra needs for in-hospital and out-of-hospital care, in addition to a higher need for medical assets – e.g. medical supplies and laboratories (Barbisch & Koenig, 2006). The authors do also recognize that a full assessment of functional areas in health care will include other areas such as (including, but not limited to), command and control, communications systems, stress management, preventive medicine and public health, laboratory, mortuary affairs and funeral services, personnel, logistics, transportation, and veterinary services (Barbisch & Koenig, 2006).

2.3.3 ORGANIZING A RESPONSE

One of the greatest challenges in crisis management, and even more so in a transboundary crisis, is to first mobilize people, money and goods, and then coordinate them. This is often referred to as “*coordinated mobilization*” (Ansell et. al., 2010, p. 199).

Particularly for transboundary crisis two coordination challenges arises. The first is inter-jurisdiction coordination, both horizontally and vertically. This means that a city or region might have to, willingly or unwillingly, cooperate with another city or region. Information is most likely to flow between jurisdictions and organizations that have prior knowledge of each

other, and that have routine interactions with each other (Ansell et. al., 2010). Vertically, there needs to be a coordination both upward and downward within the response actor (Ansell et. al., 2010). The second type of coordination challenge is the inter-sectoral coordination. This creates difficulties for management, because the different sectors often “*involve systems with different logics and operating imperatives*” (Ansell et. al., 2010, p. 196).

2.3.4 COMMUNICATING WITH THE PUBLIC

The authorities sit on raw data in form of reports, rumors and situational pictures. This unprocessed data provides difficulties in conveying correct information the right way (Ansell et. al., 2010). Regarding outbreak of diseases, the WHO (2008) has developed a framework of principles, which are built on “*evidence-based, field-tested communication guidance that would promote the public health goal of rapid outbreak control with the least possible disruption to society*” (p. 5).

1. Trust – A key principle is to communicate in a way that builds, maintains and restores trust between the public and outbreak managers.
2. Announcing early – By being proactive, and communicating a real or potential health risk is crucial. If those affected are alerted correctly it can minimize an infectious disease threat.
3. Transparency – Giving timely and complete information of a real or potential risk and its management will maintain trust.
4. Listening – Understanding the public’s risk perceptions, views and concerns is critical to effective communication and the broader emergency management function it supports.
5. Planning – Public communication during an outbreak represents an enormous challenge for any public health authority and therefore demands sound planning, in advance, to adhere to the principles described above.

2.4 COMMON SET OF QUESTIONS

The development of a framework for analysis has been done by deriving questions from the theory chapter. The first set “*The transboundary scale*”, is in place to identify and define to what grade different transboundary crisis can be deemed as equal, in this case the H1N1 influenza in Norway and the Ebola outbreak in Western Africa. The second set “*Timeframe revisited*” is used to explain the main reasons as to why pandemics occur, and to possibly identify some differences in reasons between a developed and some developing nations. The third and final set of questions “*Core challenges*”, defines what core challenges that are typical for a transboundary crisis. For example, what role uncertainty plays or what is the challenges in organizing a response. The core challenges serve as mechanisms for disease propagation.

The questions are supposed to be on an overarching level, so that they can be used for any cases of pandemics, without much adjustments. These questions are presented in Table 1.0 – Common set of questions.

Table 1 – Common set of questions

The transboundary scale	Timeframe revisited	Core challenges
<p><i>Vertical and horizontal dimension</i> Which levels of government were affected by the crisis?</p> <p>Were there spread of political boundaries, vertically and horizontally?</p>	<p>Is it possible to identify some of the main reason pandemics are developed?</p>	<p><i>Coping with uncertainty</i> Was there uncertainty about: - The source of the crisis - The evolution of the crisis - Solutions to the crisis?</p>
<p><i>Functional dimension</i> Did the crisis affect different sectors, crossing functional borders?</p>	<p>At what pace did the pandemic develop?</p> <p>At what pace did the pandemic get terminated?</p>	<p><i>Providing surge capacity</i> Were there challenges in mobilizing: - people? - money? - goods?</p> <p><i>Organizing a response</i> Were there challenges in coordinating with other cities or regions?</p>
<p><i>Timeframe</i> Does the crisis have a clear beginning and end?</p>		<p>Were there challenges in coordinating upwards and downwards within the response actor?</p> <p>Were there challenges in coordinating with other sectors?</p> <p><i>Communicating with the public</i> Were there challenges in conveying rumors, reports and situational pictures into correct information?</p>

3.0 METHOD

In this chapter I will provide explanations into the reason for choosing qualitative research method, how my comparative case study is built up and done, and how I have tried to solve some of the common pitfalls in case studies. Special focus on innovations in comparative method have been emphasized. Later, there is an overview of my data sources, which includes my own version of a “informant list” of the documents used in the study. There is also a general assessment of some drawbacks in only using secondary and tertiary data sources. Last, the very concept of measuring quality in qualitative research, and how reliability and validity are not the best measures for this will be discussed. An alternative to assessing quality will be applied.

3.1 QUALITATIVE METHOD, CASE STUDIES AND COMPARISON

My choice fell on qualitative method for studying the relationship between the pandemic in Norway and Western Africa. Qualitative method is flexible, goes in depth and often tries to understand social phenomena; choosing this method makes it possible to acquire profound and unique data (Ringdal, 2009; Thagaard, 2002). As I showed initially, there is a great lack of in depth research on pandemics, where the focus is on crisis management. Unlike quantitative research which often seeks to establish determination, prediction and generalization (Golafshani, 2003), I seek illumination, understanding and exploration of crisis management in pandemics. Many researchers have pointed out that case studies are appropriate to use when searching for a deep insight into events (Andersen, 2003; Johannessen, Tufte & Christoffersen, 2010; Yin, 2014). Furthermore, comparisons bring forth similarities and contrasts, and thus sharpens the power of description; it is a fundamental tool for analysis (Collier, 1993). Although case studies have a widespread usage, there is great confusion regarding what a case study is, and how it should be defined within social sciences (Ragin, 1987, in Kaarbo & Beasley, 1999). Furthermore, there are confusion around the terms “*case*”, “*case study*” and “*case study method*”.

The comparative study

One of the dominant definitions of a case study is Yin (1994), which states that it is an “*empirical inquiry*” into a phenomenon and its context, and that the study relies on “*multiple sources of evidence*” (p. 13). For my purposes, I will use different definitions set forth by George (1979), Bennett (2004) and Kaarbo & Beasley (1999) in their review of various definitions and uses of “*case study*” in academia, respectively. Kaarbo & Beasley (1999) define

a case “to be an instance, or data point...” (p. 372). For example, “*experimentally derived measurements, survey responses, or classifications of historical events...*” (p. 372). George (1979), historian, reviewer and early developer of comparative method, labels “a case” (along somewhat the same lines) as an instance of a class of events of interest to the investigator. A “case study” is a “*well-defined aspect of a historical happening that the investigator selects for analysis, rather than a historical happening itself*” (Bennett, 2004, p. 21). Kaarbo & Beasley (1999) adds that a case study is the “*empirical examination of a real world phenomenon within its naturally occurring context, without directly manipulation of either the phenomenon or the context*” (p. 372). Pandemics are instances, data points and a class of events that is of interest to study. The “case study” in itself is the crisis management of pandemics, that is possible to study without manipulation of either the phenomenon or the context it is happening in. Finally, Kaarbo & Beasley (1999) tells that “*comparative case study is the systematic comparison of two or more data points (cases) obtained through use of the case study method*” (p. 372).

There are many ways to perform case studies, but one of the oldest and most used method is through focused and structured comparison (Bennett, 2004; George, 1979; George & Bennett, 2004; Kaarbo & Beasley, 1999). The method, proposed by George (1979), is focused meaning that it deals selectively with only certain aspects of the case, and structured, meaning that general questions are employed to guide the data collection.

Pitfalls and research design

George & Bennett (2004) summarize three areas of common pitfalls in case studies, which include “*case selection bias*” (p. 22), “*identifying scope conditions and necessity*” (p. 25) and the “*degrees of freedom problem*” (p. 28). Case selection bias can lead to the researcher selecting a case that is not representative for the phenomenon he or she wants to investigate, and instead a case that only the researcher perceives as appropriate (George & Bennett, 2004). If I were to investigate only the Norwegian H1N1 pandemic, for example, many aspects of crisis management during a pandemic could be lost, or the potential explanatory variables possible to identify could number in the thousands. A workaround to this problem has been identified by Collier (1993), on strategically choosing cases, which I will come back to later on the “degrees of freedom problem”.

Next, “*identifying scope and necessity*” tells that case studies are only able to make “*tentative conclusions*” on how much variables affect the outcomes in cases (George & Bennett, 2004, p. 25). By defining the purpose of the study, it will have implications for this problem. Mainly the

purposes with case studies can be divided into using cases for description of a phenomenon, cases to develop theory, cases to explore and refine theory, cases as tests of the theory or using theory to explore cases (Kaarbo and Beasley, 1999). If one were to use the last typology, Levy (2008), reviewer of case studies, would name it a theory-guided idiographic case study. Being idiographic the study aims to “*describe, explain, interpret and/or understand*” (p. 4), and being theory-guided “*focuses attention on some theoretically specified aspects of reality and neglects other*” (p. 4). In other words, using theoretical variables to provide some explanation as to why something happened. While this is not a definite workaround of assessing the importance of all relevant variables, it shows that by choosing the variables that is to be studied, one has greater ability to assess conclusions of at least the variables used.

The third pitfall identified by George & Bennett (2004), the degree of freedom problem, is thoroughly discussed in Levy (2008). He points out that one of the greatest criticism against qualitative case study is that the number of variables investigated often exceed the number of cases, creating what is called “*the problem of degrees of freedom*” (Levy, 2008, p. 10). This makes it hard for the researcher to judge whether or not the theory plausibly predicts something, or if it was just a coincidence. Collier (1993) outlines three innovations in comparative method, which serves as a workaround, or decrease, of degrees of freedom; in effect: many of the pitfalls identified by George & Bennett (2004) also. All innovations have been employed in this study.

First, Collier (1993) maintains that the simplest way to avoid too many degrees of freedom is to include more cases. Thus, it has been employed the use of a second case for comparison with. The second way of decreasing too many degrees of freedom is to “*focus on comparable cases*” (Collier, 1993, p. 111). Przeworski & Teune (1970, in Collier, 1993) and Przeworski (1987, in Collier, 1993) suggests using a contrasting case, because with cases that are very much alike they fail to eliminate rival explanations. If I compared only Liberia and Sierra Leone, for example, there is the possibility that hidden variables will not be discovered. Thus, countries that is perceived as differing greatly have been applied in this study. Strategically choosing a case from a set of predetermined notions, effectively also is a workaround the case section bias identified by George and Bennett (2004). At least the individual researchers bias towards choosing cases they perceive as interesting will be reduced, and instead the researcher will be connected to a larger universe of bias. My selection bias is connected to the logic on how to create understating through strategically choosing cases that differ, as identified by Przeworski & Teune (1970, in Collier, 1993).

The last step in decreasing degrees of freedom is by reducing the number of variables through either the combination of variables, or the employment of a theoretical framework. Such a framework focuses on a smaller number of explanatory factors (Collier, 1993). The latter approach was chosen for this study, as it would also be a workaround of the problem in assessing the importance of variables (George & Bennett, 2004). Thus, a theoretical framework for the analysis was developed, using “*theory to explore cases*” (Kaarbo and Beasley, 1999, p. 374), falling within the typology of a “*theory-guided idiographic study*” (Levy, 2008, p. 4) and using the method of structured, focused comparison as proposed by George (1979).

Summarized shortly (and without the methodological concepts), my thesis will be done through comparison of the crisis management aspect during the H1N1 influenza in Norway and the Ebola outbreak in the three most affected countries in Western Africa. A basis for comparison, through a theoretical framework, have been employed to be able to focus on only certain aspects of the pandemic – avoiding an overload of competing variables. These variables are then compared and discussed, according to theory.

3.2 SOURCES OF DATA

In my thesis, I have mainly used reports and documents to collect information. Documents can be the objects of study in themselves, but in my thesis, documents are used as resources to collect information about my research questions. I have used reports, documents and assessments of the Norwegian management of the H1N1 influenza, and the West African and the WHO's management of the Ebola outbreak. Blaikie (2010) refers to this as the use of societal artefacts as data sources. These sources are directly and indirectly left behind as results of individuals or groups doing activities in their natural setting. The collection of data was done through a subjective assessment of the documents relevance, at least when the official documents were concerned. This is what Blaikie (2010) defines as purposive or judgmental sampling. The news sources were more randomly collected. The sources of data I used, particularly the different reports from the UN, the WHO and the DSB, were so extensive that I easily reached a point of saturation, where the data I collected started getting repeated.

Studies that involve interviews, or observation, often have some kind of assessment of the researcher's influence on collecting data, and general notes on this way of collecting data. Grønmo (2004) points out that “*a document, or text, has to be seen from its context in order to see if it is authentic and relevant*” (p. 190). This seems quite overarching, and prone to much subjectivity when assessing.

Thus, I have employed my own scheme for assessing the quality of documents. This has been done through a framework developed in historical studies of documents. The framework is based on examination of Nazi propaganda during World War II, and is still used in historical studies to assess “*evidentiary worth*” of documents. (George, 1959; George & Bennett, 2004, p. 99-100). The main points are that, in order to interpret the meaning and significance of something that is communicated, it is important to ask questions about *who* is speaking *to whom*, for *what purposes* and *under what circumstances* (George, 1959, p. 107-121). From this I created a table which includes the main elements in assessing evidentiary worth. The purpose of this table is to serve as a “informant list” usually seen in chapters on interviews and observations, giving the reader greater ability to assess the quality of the documents used. The documents are presented in Table 2.0 – Documents used in the empirical investigation.

Table 2 – Documents used in the empirical investigation

Author, year published, and document title	Who is speaking?	Message to whom?	What purpose?	Under what circumstances?
Carlsen, L. (2009). The Great Swine Flu Cover-Up	News source	Regular readers	Assign blame	None special, except economic incentives
CDC (2009). Outbreak of Swine-Origin Influenza A (H1N1) Virus Infection – Mexico, March, April 2009	Semi-International health governor	The public	Explanations and overview	Need for overview
DSB (2010). Ny influenza A (H1N1) 2009	Assessor of safety and contingency	The public in Norway, but open for everyone	Assessment	National scrutiny
Fauci, A. S. (2014). Ebola – Underscoring the Global Disparities in Health Care Resources	Independent researcher	Mostly researchers, but also interested public	Assessment of global disparities	Standard peer review processes
Farrar, J. J., & Piot, P. (2014). The Ebola Emergency – Immediate Action, Ongoing Strategy	Independent researchers	Mostly researchers, but also interested public	Explanation and assessment of Ebola	Standard peer review processes
Foley, S. (2009). For La Gloria, the stench of blame is from pig factories	News source	Regular readers	Assign blame	None special, except economic incentives
Lacey, M. (2009). From Édgar, Choughs Heard round the World	News source	Regular readers	Spark attention	None special, except economic incentives
Knox, R. (2009). Inside The New Flu Virus	News source	Regular readers	Provide explanations	None special, except economic incentives
López-Cervantes, M., Venado, A., Moreno, A., Pacheco-Domínguez, R., & Ortega-Pierres, G. (2009). On the Spread of the Novel Influenza A (H1N1) Virus in Mexico	Independent researchers	Mostly researchers, but also interested public	Assessment of H1N1	Standard peer review processes
Kaplan, K. (2009). Origins of the Swine Flu	News source	Regular readers	Provide explanations	None special, except economic incentives
Masterson, K. (2009). Where Did the Swine Flu Come from?	News source	Regular readers	Provide explanations	None special, except economic incentives
Morales, A. T. (2009). Granjas Carroll provocó la epidemia de males respiratorios en Perote, según agente municipal	News source	Regular readers. Focused in Mexico	Assign blame	None special, except economic incentives
Niang, C. I. (2014). Ebola: une épidémie postcoloniale	Independent researcher	Mostly researchers, but also interested public	Assessment of culture in Africa	Standard peer review processes
Philpott, T. (2009). Swine-flu outbreak could be linked to Smithfield factory farms	News source	Mainly regular readers, but open to public	Assign blame	None special, except economic incentives
RationalWiki (2016). List of conspiracy theories	Collector of anything (ir)rational	Those interested	Giving overviews	None special
UN (2016). Protecting Humanity from Future Health Crisis – Report of the High-level Panel on the Global Response to Health Crisis	International governing body	The international community	Assessment of Ebola management	International scrutiny

WHO (2008). World Health Organization Outbreak Communication Planning Guide	International health governor	The international community	Proposal for communication	International scrutiny
WHO (2010). H1N1 in post-pandemic period	International health governor	The international community	Communicating the end of pandemic	International scrutiny
WHO (2011). Implementation of the International Health Regulations	International health governor	The international community	Assessment of H1N1 management	International scrutiny
WHO (2014). Ebola and Health systems: Now is the time for change	International health governor	The international community	Communication on Ebola management	International scrutiny
WHOa (2015). At the forefront – getting to zero.	International health governor	The international community	Communication on Ebola management	International scrutiny
WHOb (2015). Bulletin of the World Health Organization	International health governor	The international community	Communication on Ebola management	International scrutiny
WHOc (2015). One year into the Ebola epidemic: a deadly, tenacious and unforgiving virus	International health governor	The international community	Communication on Ebola management	International scrutiny
WHOd (2015). Report of the Ebola Interim Assessment Panel	Independent expert assessors*	The international community	Assessment of Ebola management	International scrutiny
WHOe (2015). Weekly Epidemiological Record	International health governor	The international community	Communicating Diseases	International scrutiny
WHO (2016). WHO Director-General briefs media on outcome of Ebola Emergency Committee.	International health governor	The international community	Communicating the end of pandemic	International scrutiny
WHO Ebola Response Team (2014). Ebola Virus Disease in West Africa – The First 9 Months of the Epidemic and Forward Projections	WHO Ebola response team	Mostly researchers, but also interested public	Assessment of the Ebola virus	Standard peer review processes

* “During its special session on the Ebola emergency in January 2015, the Executive Board adopted resolution EBSS3.R1, in which, inter alia, it requested an interim assessment, by a panel of outside independent experts, on all aspects of WHO’s response to the Ebola outbreak” (WHOd, 2015, p. 9).

Drawbacks

A drawback of using only secondary and tertiary sources is the challenge of judging the quality of the data (Blaikie, 2010). Although I have provided a framework for assessing evidentiary worth regarding documents and texts, having my own raw data would strengthen the thesis. Also, the report written by the international agencies are also the ones that have defining powers in framing what is important. As such, some information they perceive as not important might have been left out. That being said, some of the best experts, researchers and assessors have been part in producing those reports, while being under international scrutiny. One wrongdoing and the whole report might be deemed as incorrect. Because of this, the secondary and tertiary data that have been used from the UN, the WHO, the DSB and all the independent assessors, I would argue are of very high quality. One of the reports published by the WHO (WHOd, 2015) were assessed by a panel of independent experts, which further strengthens the quality of this document.

Another drawback is that the aim of the persons conducting data collection does not have the same aim with their research as I have (Blaikie, 2010). While this is a valid point, it is also double edged. The lack of similarity between my aim and the data sources I have used actually ensures a greater neutrality from my side, since I am unable to influence the data collection process in the same way as often seen in qualitative analysis (e. g. subjectivity, interpretations, halo-effects, forced questions and so on). Then again, the initial data collection by the assessors were to some degree influenced by such pitfalls.

3.3 QUALITY IN QUALITATIVE RESEARCH

To test the quality of studies, one can try to achieve reliability, internal validity and external validity (Yin, 2014). Whittmore, Chase & Mandle (2001), in their review of the concepts of reliability and validity, points out that they stem directly from quantitative research. As such the concept are tried to be used with the same standards of quality testing as in “*positivistic philosophy*” (p. 523). The idea of reliability is a “*concept used for test or evaluating quantitative research*”, but is often used in “*in all kinds of research*” (Golafshani, 2003, p. 601). Validity also finds its roots in a “*positivist tradition*” (Golafshani, 2003, p. 599). The problem is that most qualitative research is not within a positivist tradition, but more towards an interpretive line of thought. Whittmore et. al. (2001) underline that “*the type of knowledge that the different approaches generate and the different philosophical perspectives on reality*” poses questions if it is appropriate to use similar standards of quality testing in qualitative and quantitative

research (p. 524). As an example, Whittmore et. al. (2001) points out that the “*important distinction between internal and external validity in quantitative research*” are somewhat pointless within a research tradition where “*generalization to populations is not a significant research goal*” (Whittmore et. al., 2001, p. 524). The authors maintain that the nature of “*qualitative research is contextual and subjective versus generalizable and objective*”, as such it is not appropriate to use quantitative criteria as quality indicators for qualitative research (p. 524). Golafshani (2003) points out that some researchers even go as far as implying that in any qualitative studies that include the notion of reliability the study will always be deemed as not good (p. 601). Point being that reliability refers to stability in measurements, which is almost impossible in qualitative research. The use of quantitative measures of quality in qualitative research is even by some researchers perceived as a “*procedural charade*” (Kahn, 1993, in Whittmore et. al. 2001, p. 524).

As I have pointed out earlier, the aim of my study has never been to generalize findings, provide predictions or aggregate evidence; this is a qualitative study, which focuses on exploration, illumination and to seek understanding.

How to measure quality then?

Although validity and reliability might be, as regarded by a growing number of researchers, poor measures of quality in qualitative research, there is still a need for assessing the quality of the research done. Without quality checks there is the risk of falling within the realms of pseudo-science. Whittmore et. al. (2001) reconceptualize the notion of testing quality in qualitative research by a synthesis of critique on quality measures, and different new proposal for the concept set forth by researchers throughout the years. The new measurement of quality can mainly be divided into primary and secondary criteria. Primary criteria are necessary to all qualitative inquiry, these include credibility, authenticity, criticality, and integrity (Whittmore et. al., 2001, p. 529). Secondary criteria provide further measures of quality and are considered to be more flexible in their use. These criteria include explicitness, vividness, creativity, thoroughness, congruence, and sensitivity (Whittmore et. al., 2001, p. 529). Through these criteria both reliability and validity, and other important aspects, such as writing style and ethics, are meant to be covered. The intentions of this framework is to give a better measure of quality than it would through just the reliability and validity concepts, as copied from quantitative approach. These new set of criteria frees the study from the shackles of the

positivistic research paradigm quality measures, as using a theory-guided idiographic case study are much closer to the paradigm of the interpretivist and qualitative research.

3.3.1 PRIMARY CRITERIA OF QUALITY

This chapter will cover the criteria that are necessary in all qualitative research to achieve quality in research: credibility, authenticity, criticality, and integrity.

Credibility and authenticity

Credibility is the conscious effort to establish confidence in an accurate interpretation of the meaning of the data (Whittmore et. al, 2001, p. 530). In other word, does my results reflect the real world phenomenon, or if my interpretations reveal truths external to my investigation. Through the use of a developed theory as framework and the choosing of different cases to investigate the phenomenon it has strengthened the credibility of my findings. A careful description of pitfalls in the case study method has been given, with ways I tried to work around them. The aim of this was to reduce the conditions that can negatively affect the credibility of the thesis, and also give the reader the ability to assess credibility for themselves.

Through the use of an “informant list” I have tried to provide the reader with greater ability to assess the authenticity of my findings. Authenticity, which is closely linked to credibility, relates to the portrayals of meanings that the sources of information experienced (Whittmore et. al, 2001, p. 530).

Criticality and integrity

Because interpretations, assumptions and knowledge background of investigators are potentially infinite, it is easy to both consciously and subconsciously influence the research (Whittmore et. al., 2001, p. 531). The research design needs to be portrayed in such a way that critical appraisal of one’s own design is shown, for example through discussion on exploring instances and biases. The method chapter has been done with complete openness on how my study has been built and why the design is a theory-guided idiographic case study.

Integrity means that it has to be shown how the interpretations are valid and grounded within the data, as such the investigators should try to be self-critical at each phase of inquiry (Whittmore et. al., 2001, p. 531). Although I have tried to make it clear throughout empirical investigation and discussion how my claims have been made, those part could probably have been more separated for a greater overview of what is hard data, and what is discussion thereof.

In my opinion, this would not fit the writing style of my thesis, as such a separation leads to much repetition; the result being that the thesis loses some of the flow that I have tried to create between, and within, chapters.

3.3.2 SECONDARY CRITERIA OF QUALITY

This chapter covers the secondary criteria of validity, while not as broad as the primary criteria, they are important standards of quality identified in the literature (Whittmore et. al., 2001, p. 531). These criteria are explicitness, thoroughness, congruence, vividness, creativity and sensitivity.

Explicitness, thoroughness and congruence

These criteria are more related to the reliability part of the thesis. In my study, I have provided an introduction to the area of problem and justification for choosing my research problem. An overview of the complete literature review has been provided, so that the reader themselves can assess if I chose the most appropriate theoretical framework. Common set of questions derived from the theory has also been presented, for the reader to question what was the basis for empirical investigation and discussion. This shows explicitness, which relates to the ability to follow the interpretive effort of the investigator, meaning that the interpretations and methodological decision and are accounted for, resulting in insight into the researcher's judgements (Whittmore et. al., 2001, p. 531).

Thoroughness can be understood as the comprehensiveness of the data and how well the approach and analysis is performed, leading up to what is called saturation (Whittmore et. al., 2001, p. 532). I did not only base my empirical investigation on one agency, or even only the crisis management aspect of pandemics. There is used news sources, researcher with their own aims, independent assessors, assessors of policy, assessor of crisis management and assessors of culture.

I have tried to rigidly use the research aim and questions as foundations for the entire thesis. Through the use of qualitative method, I use one key tool for getting in depth, which is the case study. Furthermore, I employed a theoretical framework for better in depth explanatory power during the empirical discussion. Also, the subchapters in the theory chapter, fits the research questions and the empirical investigation and discussion part. This is an attempt at achieving congruence, meaning that research question, the method, and the findings should match each other (Whittmore et. al., 2001, p. 532).

Vividness, creativity and sensitivity

These criteria are more linked to writing style and ethics, but are none the less indicators of quality in qualitative research. Through portrayal of the phenomenon the reader should personally experience and understand the phenomenon or context described, although it is important to describe without overwhelming the reader with excessive detail (Whittmore et. al., 2001, p. 531). I have tried to balance theoretical and methodological concepts with a nuanced language, although it is not so easy to achieve this. Furthermore, I have tried to build my thesis more like a story, and to ensure flow in and between chapters.

Creativity, which probably is not the strongest aspect of my study, is demonstrated through being able to answer research questions through methodological design, while having flexibility within the inquiry design, imaginative ways of organizing, presenting and analyzing data. Although it must still be grounded in the scientific process (Whittmore et. al., 2001, p. 532). Ways creativity can be shown is through the development of models, but this has not been done in this study, as I do not want to force something that is not present throughout my data.

Sensitivity is tightly linked with ethics, and as I did not interview, observe or use sensitive documents, questions about ethics have not been addressed in my study. The criterion regards if the research has been sensitive to human nature, cultural, and social contexts (Whittmore et. al., 2001, p. 532)

4.0 EMPIRICAL INVESTIGATION AND DISCUSSION

This section will present the empirical data collected, and also discuss the findings through comparing the cases with each other and the theory. This will be done consecutively throughout the chapter. Differences and similarities between the H1N1 influenza in Norway and the Ebola outbreak in West Africa will be discussed initially by comparing certain qualities set out by Ansell et. al. (2010). Later, the story of pigs and bats will be told, with focus on crisis development and termination. Using t' Hart & Boin (2001) crisis typology the timeframes of the H1N1 influenza and the Ebola outbreak will be highlighted. In the end, the mechanisms for disease propagation will be identified through Ansell et. al.'s (2010) framework on core challenges.

4.1 THE TRANSBOUNDARY SCALE

To compare cases, it is important that they possess the same qualities. This chapter will address these qualities between the H1N1 influenza in Norway and the Ebola outbreak in West Africa. Levels of governance, cross-sector spread and timeframe for crisis are main qualities, as identified by Ansell et. al. (2010), for grading just how transboundary a crisis is.

4.1.1 PREPAREDNESS VERSUS LACKING DELEGATION

Ansell et. al. (2010) identifies that levels of governance, both vertically and horizontally, and political boundaries are the main areas of authority in a crisis.

Levels of governance

Health is considered the sovereign responsibility of countries, however, the means to fulfill this responsibility is increasingly global (WHOa, 2015, p. 5). When there is a threat to global health, the WHO³ is immediately involved in different degrees. The agency serves as an international governing authority on threats regarding global health and can give guidance on the international effort to combat the pandemic. These efforts are enforced through the International Health Regulations (DSB, 2010). Norway, for example, was obliged to cooperate with other governments nationally, and to report their progress to the WHO during the H1N1 influenza pandemic. According to Ansell et. al. (2010) the more levels of governance that is involved in a crisis, the more difficult it will be to manage. International and national laws usually govern what levels of government are involved. In Norway, the Law on health and societal contingencies, dictates that municipalities, county administration, regional health enterprises and the state are required to develop contingency plans for the medical and social services they are responsible for, with the health and well-being of the inhabitants as a focus (DSB, 2010 p. 11).

In Western Africa, national governments and some Non-Governmental Organizations, were involved in the Ebola outbreak response. When 1,600 people had been infected and the epidemic was spiraling out of control the WHO declared the Ebola outbreak to be a “Public Health Emergency of International Concern” (UN, 2016, p. 6). This attracted the international attention and also international levels of governance, which led to more resources at disposal. Several regional and sub-regional organizations took action to support the response to the Ebola outbreak when the national levels of government in the most affected countries were

³ As shown in Appendix 2.0

overwhelmed. Most prominently, the African Union Peace and Security Council authorized the deployment of an African Union-led Military-Civil Humanitarian Mission consisting of medical doctors, nurses and paramedical personnel (UN, 2016, p. 42).

In Norway, the Law on special health care (DSB, 2010, p.11) states that regional health enterprises should give special health-care, and develop contingency plans for the people in their health regions. Also, the Law on protection against infectious diseases (DSB, 2010, p. 11) gives the Health Directorate a key role in deciding if, and when, municipalities, counties or state institutions should organize certain services or measures. The law also imposes the Public Health Institute to monitor the epidemiological situation, and ensure adequate vaccine supply and preparedness. At the top level, the leading organ in dealing with epidemics/pandemics is the Health Department. This is embedded through “*Stortingsmelding Nummer 37*” (DSB, 2010, p. 12).

From this we can see that both Norway and Western Africa had all levels of government involved from top to bottom, or in other words: from state to municipalities and local health. The difference is that in the West African region there was to a much higher degree the involvement of international levels of governance.

Political boundaries

The H1N1 influenza infected almost the whole world, but every country were themselves responsible in managing the threat nationally. In Norway, the WHO's focal point is the Public Health Institute (DSB, 2010, p. 39). Norway was initially governed internationally through the IHR §10, which made the Public Health Institute notify the Health Department, the Health Directorate and hospitals on the “Declaration of the Public Health Emergency of International Concern” described by the WHO (WHO, 2011, pp. 54-55). After this, the WHO had minimal interactions with the Norwegian response to the pandemic, except from giving international situational reports on the H1N1 influenza, technical guidance on the pandemic, and doing international surveillance on the spread of the outbreak (DSB, 2010 p. 74). The WHO's interaction with national governance was the opposite for the three most affected countries in Western Africa.

During the early days of the Ebola outbreak, there was a lack of clarity over national administration and who were in charge of coordinating the response, and which organizations should attend relevant meetings (UN, 2016, p. 37). In addition, there was a lack of clarity from

the WHO over the inter-agency leadership and coordination arrangements for health crises, which delayed a response UN, 2016, p. 8). This delay led the United Nations Secretary-General to take the unprecedented decision to establish the first United Nations health emergency mission (UN, 2016, p. 8).

In Norway, there was a clear delegation of responsibility, from state to municipal level, as outlined through the framework “National Contingency Plan for Pandemic Influenza”, although the political boundaries were maybe not so clearly accounted for (DSB, 2010, p. 13). Horizontally, there was an equal responsibility for each municipality in providing health support to its inhabitants (DSB, 2010). The response to the H1N1 influenza was, to some extent, spread across horizontal boundaries.

In line with Ansell et. al. (2010), I would argue that because of the wider spread of political boundaries in Western Africa, the Ebola outbreak would be more difficult to manage, although Norway also experienced some political spread. In Norway there was a predetermined plan for delegation of responsibility, while this was not the case in the West African countries. The lack of clear cut delegation led to an extensive spread of political boundaries, all the way up to the UN, the WHO and other actors (including national and foreign Non-Governmental Organizations).

4.1.2 INDICATIONS OF INTERCONNECTEDNESS

The H1N1 influenza in Norway was mainly a concern for the health sector, although other sectors would have been affected depending on the development of the pandemic (DSB, 2010, p. 57). The other sectors involved, was so, mainly due to questions regarding persons with Norwegian ethnicity in foreign countries and the spread of the disease from human to swine (DSB, 2010, p. 57). For the three most affected countries in West Africa it was, again, the opposite.

The impacts of the Ebola outbreak spanned well beyond health, economies were affected, food became scarce, and development stalled (WHO, 2014). Approximately 70 countries imposed more than 500 travel or trade restrictions on travelers or goods from affected countries (UN, 2016, p. 66). Rice production, in Guinea, fell by 20 per cent, coffee production by 50 per cent and cocoa production by 33 per cent (UN, 2016, p. 26). Small businesses collapsed, markets closed down, and farming activities was abandoned (UN, 2016, p. 26). Fishery exports, fell by 40 per cent, while rubber exports experienced a similar decline in Liberia (UN, 2016, p. 27). In all three Ebola-affected countries, international investors postponed new projects or pulled out

altogether, and as airlines suspended flights and potential visitors changed their plans, hotel occupancy fell sharply. The Gambia, which has never had a case of Ebola, saw a 65 per cent decrease in tourism (UN, 2016, p. 27). Schools remained closed for more than five months, depriving an estimated five million children of educational opportunities (UN, 2016, p. 27).

Some responders noted that the exclusive focus on the Ebola response led to the suspension of many essential social services, including vaccination (UN, 2016, p. 40). In Liberia, for example, routine immunizations against measles were suspended during the Ebola outbreak (UN, 2016, p. 40). The death-toll from other health impacts of Ebola is likely to be larger than the death-toll from the epidemic itself (UN, 2016, p. 40).

According to Ansell et. al. (2010) the crossing of functional borders makes a transboundary crisis more difficult to manage. In Norway, this was not a main concern, while it was a great challenge for the Ebola-affected countries. When the health of whole societies started to deteriorate, it had impacts on all other sectors. The effects the Ebola outbreak had on other sectors in Western Africa highlights gives strong indications on just how interconnected health is with other systems. This is not that illogical, as health and the will to survive is perhaps one of very few things every living being has in common. Thus, I would argue that the consequences of deteriorating health in Western Africa indicate that the health sector might be one of the most important for preserving the continuity of communities.

4.1.3 THE CUSTODIANS OF A CRISIS

The H1N1 influenza was formally declared as a “Public Health Emergency of International Concern” on the 24th of April 2009, and the WHO increased the pandemic threat level on the 29th of April 2009 (DSB, 2010, p. 42-44). Then on the 11th of June 2009, the WHO declared a pandemic (DSB, 2010, p. 42-44). The 10th of August 2010, the H1N1 influenza was no longer in phase 6 of influenza pandemic alert, and instead were now moving into the post-pandemic period (WHO, 2010).

The Ebola outbreak was formally declared as a “Public Health Emergency of International Concern” on the 8th of August 2014, then on 18th and 19th of September 2014 an emergency session of the UN Security Council was convened (UN, 2016, p. 82). It was decided to create the United Nations Mission for Ebola Emergency Response (UNMEER), the first time in history the UN has created a mission for health emergency (UN, 2016, p. 82). On the 7th of November 2015, Sierra Leone was declared Ebola-free, and the 29th of December 2015 Guinea

was also declared Ebola-free (WHO, 2016). On 29th of March 2016 the Ebola was degraded from a “Public Health Emergency of International Concern” (WHO, 2016).

A crisis with clear cut beginning and end are easier to manage according to Ansell et. al. (2010). Both the crisis in Norway and West Africa are clearly defined by the WHO as to when they began and ended. This implies that these cases should have been easier, than a pandemic in which there are uncertainty about the beginning and end, to manage. The WHO as custodians of framing a crisis’ start and ending can result in this misinterpretation.

4.1.4 H1N1 INFLUENZA AND EBOLA COMPARABLE?

Through the mapping of the dimension identified in the transboundary crisis theory it should be possible to answer to what extent the H1N1 influenza in Norway and the Ebola outbreak is comparable.

I would argue that the H1N1 influenza pandemic in Norway and the Ebola outbreak in Western Africa are comparable. While the Ebola outbreak surely is *more* transboundary on the scale, most of the same factors defining these kind of crisis can be found within both cases. According to Ansell et. al. (2010) then, the Ebola outbreak in Western Africa should be harder to manage than the H1N1 influenza in Norway, even though they both are a pandemic; the reasons being more levels of government involved and the greater spread of political and functional boundaries during the Ebola outbreak.

While it was not initially the purpose of the research question, some additional findings surfaced in comparing Norway with the countries in Western Africa.

First, the importance of preparedness makes it self quite clear when there were great uncertainties around political authority and responsibilities in the affected countries in Western Arica. The result of not having a predetermined plan for delegation, made the Ebola outbreak much worse. I am not arguing that if such a predetermined plan was in order in the affected countries in Western Africa the Ebola outbreak wouldn’t have happened, but at least delegation of responsibilities and authorities would have gone smoother. In effect, there could have been less initial stalling on managing the Ebola pandemic. Second, interconnectedness was shown through the consequences of a poor health system. Third, the WHO as custodians of a crisis is questioned, since it can lead to misinterpretation of the timeframe and how difficult a crisis should be to manage. This led me to a different view on crisis development and the revisit of timeframe of the pandemics.

4.2 PIGS AND BATS AND TIMEFRAMES

This section will give an overview on how the H1N1 influenza and the Ebola virus originated and spread. The development of the crisis will be addressed and then there will be a discussion on crisis termination. The last part will question whether “survival of the richest” is really applicable when infectious diseases are concerned.

Pigs

The most probable source of the H1N1 influenza is from La Gloria in Veracruz in Mexico, and a boy named Édgar Hernández. He was identified as the first person infected with the H1N1 influenza (Lacey, 2009). Initially, many news sources blamed the pig farms near La Gloria as the origin of the H1N1 virus (Carlsen, 2009; Foley, 2009; Morales, 2009; Philpott, 2009). This spurred an investigation of the pig farms and the health of the pigs, but the results were disappointing for those in the media apparatus that wanted to solely blame meat producing corporations. This would fit nicely into Noji (2008) and Ross et. al. (2015) description of food processing as a main factor for creating pandemics, but experiments on the pigs showed that this was not the case. There was no evidence of *“influenza-like disease either among the 16,125 swine at the pig breeding farm nearby or among the hogs owned by the locals. Also, no influenza-like symptoms have yet been documented among the farm workers or in the community”* (López-Cervantes, Venado, Moreno, Pacheco-Domínguez, Ortega-Pierres, 2009, p. 329).

The H1N1 influenza is a combination of classical influenza, North American avian flu and a strain of human flu, which all at the same time recombined inside one pig to create the new influenza H1N1, also labeled “swine flu” (Kaplan, 2009; Knox, 2009; Masterson, 2009). How this happened is still a mystery, as pigs does not have the habit of traveling internationally, and when they do, it is under strict quarantines (Kaplan, 2009). This has of course spurred many conspiracy theories on how the virus was created, the two dominant being that it was a terrorist attack, and the other that it was created by the American government (RationalWiki, 2016).

While there is uncertainty around the creation of the H1N1 influenza, the most probable reason for the spread of the H1N1 influenza is the high rate of migration between the states of Veracruz and Oaxaca (López-Cervantes et. al., 2009, p. 329). This is in line with Noji (2008) and Ross et. al. (2015), whom state that overpopulation and travel are main factors for the creation of pandemics. The H1N1 influenza pandemic is estimated to have killed 12,469 persons in the

USA, but its estimated death toll in Africa and Southeast Asia was 10 times higher (UN, 2016, p. 28).

Bats

The Ebola outbreak on the other hand, is a previously known infectious disease, and was originally identified in 1976 in Zaire and South Sudan (Fauci, 2014, p. 1084). Emile Ouamouno from Meliandou, Guinea, was two years old when he suffered a brief and intense fever and died on the 28th of December 2013 (UN, 2016). Likely transmitted through contact with an infected fruit bat, the virus that killed Emile spread quickly and led to the deaths of his sister Philomene, his pregnant mother Sia, and his grandmother Koumba (UN, 2016, p. 21). When Koumba sought treatment at the hospital in nearby Guéckédou, the infection spread to health workers, who in turn, unknowingly carried it to other villages (UN, 2016, p. 21). At the end of January 2014, Guinean authorities dispatched a team of local health workers to Meliandou to investigate the mysterious deaths, but the team failed to diagnose the disease (UN, 2016, p. 21). Through this it is quite easy to identify factors such as land use (food source) and absent or ineffective health and surveillance systems as outlined by Noji (2008) and Ross et. al. (2015) as factors for the creation of pandemics.

It was not until the end of March 2014 that the Ebola virus was identified and reported to the WHO in Geneva, by which 49 cases and 29 deaths had been registered and the disease had already spread to neighboring Sierra Leone (UN, 2016, p. 21). Eventually, tragic scenes started to play out on the streets of Monrovia, Freetown, and other rural areas, where people were dying at the gates of overflowing treatment centers (UN, 2016, p. 23). There was even spread of the virus through international air travel, confirming again Noji (2008) and Ross et. al. (2015) summary of factors contributing to a pandemic. An airline passenger, Patrick Sawyer, a top government official in Liberia, introduced the virus into Lagos, Nigeria – the first time that Ebola enters a new country via international air travel (UN, 2016, p. 81). On the 2nd and 5th of August 2014, the first American and Spanish patients with Ebola were medically evacuated to their home countries (UN, 2016, p. 23). The arrival of Ebola in the developed world sparked global media attention to the disease (UN, 2016, p. 23).

The Ebola pandemic in West Africa was unprecedented in scale, but the infection rate and the transmissibility of the virus are similar to those in previous Ebola outbreaks (WHO Ebola Response Team, 2014, p. 1487). Guinea, Sierra Leone, and Liberia are resource-poor countries already coping with major health challenges, such as malaria and other endemic diseases, some

of which may be confused with Ebola (Fauci, 2014, p. 1085). The WHO Ebola Response (2014) team claim that the present epidemic is exceptionally large, but not because of the biologic characteristics of the virus (p. 1487). Another assessment state that it is unlikely that the particularly devastating course of this epidemic can be attributed to biologic characteristics of the virus. (Farrar & Piot, 2014, p. 1545). It is then confirmed that this particular outbreak of Ebola is no less virulent than earlier outbreaks, and that there needs to be other explanations for the course of events in the outbreak.

The West African borders are porous, and movement between countries is constant, where health care is inadequate, and health workers and essential supplies are scarce (Fauci, 2014, p. 1085). Hospitals often became centers of infection (UN, 2016, p. 22). In 1987, the International Monetary Fund closed its portfolio to an already deeply plagued and corrupt regime (Niang, 2014). The collapse of state resources caused the systematic dismantling of public authorities, especially in rural areas (Niang, 2014). More than 30 per cent of the rural population lacks access to potable water, 4 out of every 5 people lack access to basic sanitation facilities, one-third of all children under 5 suffer from stunted growth due to under-nutrition, more than 30 per cent of children do not complete primary education, and less than half of all adults are literate (UN, 2016, p. 55).

There is a misappropriate number of people infected and killed based on how developed the health systems in the country is. Where you live in the world, in a Western developed nation, or in a poorer developing country, will be a deciding factor if you live, die or spread the infection onwards. During the H1N1 influenza pandemic it was 10 times more likely to die if you were born in a poor part of the world. This unfair situation was also illustrated by Ebola, which were unable to spread in Western civilizations, but resulted in thousands of deaths in Western Africa.

Crisis development

Using 't Hart & Boin's (2001) typology I would argue that the H1N1 influenza should not have been a surprise. The modern world, with international travel, deforestation, poverty, migration and land use forces strains of virus in closer proximities to humans. Thus, modernization of the world has slowly laid the grounds for pandemics to happen. I would argue that the H1N1 crisis was being slowly developed through the process of developing the modern world; in essence, the modern world actually creates the infrastructure for pandemics.

The Ebola outbreak is a result of much of the same processes as the H1N1 influenza pandemic, and neither this pandemic should have been a surprise. Emile Ouamouno, patient zero of the Ebola outbreak, set off a chain of events that would lead to the deaths of more than 11,000 people, create worldwide fear, and require the mobilization of a multi-billion-dollar global response (UN, 2016, p. 4). In line with t' Hart & Boin (2001), this crisis was also being developed slowly by the modernization of the world. Factors such as food processing, land use and international travel (Noji, 2008; Ross et. al., 2015) played a crucial role in creating the foundations for the original Ebola virus identified in 1976. What separates the Ebola outbreak from the H1N1 influenza is that it was not the biological characteristic of the Ebola in itself that caused the pandemic to be so comprehensive. The intensity was facilitated by factors such as poverty and absent or ineffective health and surveillance systems. This is also in line with Noji (2008) and Ross et. al. (2015).

Crisis termination

The H1N1 crisis was terminated somewhat slowly, following the natural evolution of the virus. As said by the Director-General of the WHO on when the pandemic was labeled as over: *“The world is no longer in phase 6 of influenza pandemic alert. We are now moving into the post-pandemic period. The new H1N1 virus has largely run its course”* (WHO, 2010). Although the termination process of the virus was not yet over, as there were still cases of H1N1 influenza circulating: *“As we enter the post-pandemic period, this does not mean that the H1N1 virus has gone away. Based on experience with past pandemics, we expect the H1N1 virus to take on the behavior of a seasonal influenza virus and continue to circulate for some years to come”* (WHO, 2010). The strategy to terminate the H1N1 influenza in Norway was highly dependent on vaccines, and then to “wait the pandemic out”.

The Ebola outbreak was terminated very slowly, following measures of tracing, monitoring, containment and the building of capacities and capabilities to manage further cases of Ebola outbreak (WHO, 2016). It is noted that Western Africa now possess the world’s largest pool of expertise in responding to Ebola, and that vaccine creation has sharpened the ability to fight Ebola with containment (WHO, 2016). It is also pointed out that a high level of vigilance and response capacity must be maintained to ensure the ability of the countries to prevent Ebola infections and to rapidly detect, and respond to flare-ups in the future (WHO, 2016).

The pace of termination in Norway followed what the population needed to fight the disease: immunity. Thus, vaccination was the main instrument for combating the H1N1 influenza,

seeing that health systems were already in order. In the Ebola outbreak however, these health systems had to be created first. When these were in order, it was possible to combat the Ebola outbreak under somewhat same terms as in Norway: with immunity generated from vaccination. While this is an oversimplification of what was needed in the Ebola outbreak response, it does show that vaccines were the final solution to the Ebola outbreak as well.

4.2.1 SURVIVAL OF THE RICHEST?

Through empirical investigation, comparing of the cases, as well as theoretical considerations in the discussion it is possible to identify what the relationship between Norway and the most affected countries in Western Africa has on reasons for pandemics emerging.

Both the H1N1 influenza and the Ebola outbreaks were developed and terminated slowly. This makes it possible to characterize them as a slow-burning crisis (t' Hart & Boin, 2001). It seems like the general perception that the WHO was taken by surprise has spurred many formal investigations into their management, with critique and proposal for changing the agency (WHOd, 2015). This also happened after the H1N1 influenza (UN, 2016). Although it is important to have an international governing body, that knows what it does, I would argue that this is to overlook the dimension of slow development, caused by factors identified by researchers such as Noji (2008) and Ross et. al. (2015). No matter how much the WHO is changed to better be able to manage pandemics, the foundations for a pandemic will always be there. Looking forward it is even more somber, as the factors that slowly have created pandemics are only increasing. The focus on the WHO's wrongdoings can hide other important aspects of a pandemic.

Thus, if one defines the H1N1 influenza and the Ebola outbreak as a long-shadow crisis, which develops quickly and is terminated gradually (t' Hart & Boin, 2001), the focus on wrongdoings could be pushed towards the states and the WHO's strategic, operative and tactical management of the crisis. By adopting the second view, of a crisis that is slow-burning, factors such as food processing, land use, international travel, poverty and absent or ineffective health and surveillance systems are easier to identify as reasons for the pandemic. The best view would probably be to combine both perspectives and say that there are reasons for the slow development of a pandemic (e.g. land use, international travel, poverty), while lacks in management can lead to disease propagation.

I would argue that the relationship between Norway and the most affected countries in Western Africa is that factors such as international travel, deforestation, migration and land use create

breeding grounds that, non-discriminately, can affect both developed and developing nations. The difference is that factors such as poverty and absent or ineffective health and surveillance systems, will play a crucial role in facilitating how the pandemic will unfold. A poor health system will eventually lead to the spread of an infection. Either way, every nation is likely to be affected as long as there are poor health systems where pandemics originate from. It also implies that the management of a pandemic, in many ways, is actually the management of an epidemic in the source countries. Both the H1N1 influenza and the Ebola virus had to be terminated through immunization, but in Western Africa health systems had to be created first.

4.3 CORE CHALLENGES

A great deal of challenges can emerge during crisis, and this section will discuss many of them. Ansell et. al. (2010) categorize four core components of challenges that emerge during any crisis: uncertainty, surge capacity, organizing a response and communicating with the public. These challenges and how they are propagating disease will be summarized in the last part.

4.3.1 DELIBERATE UNCERTAINTY-MAKING

Rosenthal, Boin & Comfort (2001) tells that uncertainty is a defining characteristic of any crisis. Ansell et. al. (2010) divides uncertainty in three main components: source of the crisis, evolution of the crisis and possible solutions.

Source

There was not much uncertainty about the source of the H1N1 influenza in Norway, because there were early warnings on the emergence of a new strain of virus that could lead to a pandemic. Mexican authorities discovered outbreaks of respiratory illness in an increasing pattern in patients (CDC, 2009). On April 12th, the General Directorate of Epidemiology in Mexico reported an outbreak of influenza-like illness in a small community in the state of Veracruz, this was reported further to the Pan-American Health Organization, and then it was picked up globally (CDC, 2009).

Uncertainty during the Ebola outbreak was greater. A lack of reliable data led the WHO and others to underestimate the scale of the outbreak (UN, 2016, p. 46). The WHO did not adequately take into account the fact that significant numbers of initial cases of Ebola went unreported and that early response efforts were highly insufficient. Responders incorrectly assumed that the outbreak would “burn itself out” within a few weeks (UN, 2016, p. 46). One humanitarian agency leader said, “*We didn’t really pay attention to the Ebola outbreak at first,*

because to us the numbers were so small” (WHOd, 2015, p. 23). When recognized, the scale of the outbreak was underestimated by experts and minimized by authorities, despite numerous warnings from groups (including Médecins Sans Frontières) (UN, 2016, p. 6).

If uncertainty caused by weak health systems was not enough, the governments in the Ebola-stricken countries also undermined the threat, and it might even seem like the governments tried to create uncertainty. The most probable reason for this was in order to postpone the “Declaration of a Public Health Emergency of International Concern”, and in some kind of backwards way, this did in fact postpone the label of a crisis by the WHO. In the affected countries, national and local authorities initially played down reports of an Ebola outbreak for political reasons (UN, 2016, p. 22). In addition, while Non-Governmental Organizations and first responders were allowed to do their work, they were not always given the support they needed (UN, 2016, p. 22). Some Non-Governmental Organizations representatives even reported that government officials had called them alarmist in the early months of the Ebola outbreak (UN, 2016, p. 37). The governments of the three most affected countries and the WHO maintained that the outbreak would soon be under control (UN, 2016, p. 6). In some instances, there was initial denial of both cases and the extent of the outbreak on the part of national authorities (WHOd, 2015, p. 13). This is what I would like to call “*deliberate uncertainty-making*” in an effort to postpone the crisis.

Evolution

During the H1N1 influenza, the WHO did draw attention to the uncertainty of how the pandemic could evolve, primarily illustrating the possibility that the virus could change its properties, and thus lead to a more serious threat (DSB, 2010, p. 77). Also, the European Centre for Disease Prevention and Control highlighted that there was uncertainty around how the virus would affect particularly vulnerable groups of people (DSB, 2010, p. 77). The WHO also compiled frequent situation updates, which gave an overview of the global effort to combat the H1N1 pandemic and overviews of the spread of the infection (DSB, 2010, p. 74).

The evolution of the Ebola crisis was more unclear. Some even feared that the virus could become endemic – meaning that it would become “normal” with Ebola infection and outbreak in these countries. Projections suggested that unless control measures improved quickly, the three most affected countries would be reporting thousands of cases and deaths each week (WHO Ebola Response Team, 2014, p. 1494). The uncertainty was heightened because of the lack of surveillance systems to monitor the Ebola virus, with estimates passing millions of

deaths. A study by the US Centers for Disease Control and Prevention predicted there would be more than 1.4 million Ebola cases in the three affected countries by January 2015 (UN, 2016, p. 49). There was also concerns about the total disintegration of the health care systems in the affected countries, with clinics closing, becoming overwhelmed or nonfunctional. There was a very real danger of a “*complete breakdown in civic society*”, as the population continues to lose faith in the systems that are meant to take care of them (Farrar & Piot, 2014, p. 1545).

Solution

As proposed by the Norwegian “National Contingency Plan for Pandemic Influenza”, vaccines were the main strategy to solve the H1N1 pandemic (DSB, 2010, p. 71). This response is in line with the strategies that were adopted by other European countries (DSB, 2010, p. 72). To dimension the efforts made to manage the pandemic, the Public Health Institute reassessed the probability of the worst case scenario proposals, and concluded that a new plan for action was needed, although vaccines were still to be the main strategy (DSB, 2010, p. 14).

In Western Africa there was some uncertainty about solutions to the crisis, but mostly there was the realization that maybe previous solutions would not work. In an interview with the leader of the Ebola response he commented: “...*the stark realization that the classic Ebola strategy was not going to work kept me awake at night*” (WHOa, 2015). It is also noted that it is unlikely that any miracle cure, such as a vaccine, would end the pandemic. When the Ebola outbreak in West Africa gained international attention, significant funding was made available to research institutions to accelerate work on a vaccine (UN, 2016, p. 59). The WHO assisted in fast-tracking vaccine development and provided leadership in the trials for candidate vaccines and in the use of experimental therapies, these were important contributions to solving the crisis (WHOd, 2015, p. 21).

Summed up, in Norway there were a reassessment of the initial plans to solve the pandemic, where they scaled the response down – vaccines still being the main strategy. During the Ebola crisis it was quite clear that maintaining the response would prove crucial for solving the crisis, where maintaining was connected to great uncertainty. Not until the Ebola outbreak was given international attention was it possible to fast-track possible solutions, through developing durable health systems and vaccines.

4.3.2 PROVIDING SURGE CAPACITY

In any crisis there are challenges in mobilizing people, money and goods (Ansell et. al., 2010). This was also the case for both the H1N1 influenza in Norway and the Ebola outbreak in Western Africa.

People

It is pointed out that lack of competent personnel would have limited the capacity to respond to the H1N1 influenza in Norway (DSB, 2010, p. 16). The report by the DSB (2010) point out that in case of a serious pandemic, the health services in some areas could cease to function. The mild severity of the H1N1 influenza made this only a hypothetical issue; there was no such surge in workforce needed. Through conversations with the health personnel, they confirmed that there was a lack of thorough training, and that such competence would be a bottleneck in an eventual new pandemic (DSB, 2010, p. 173). Further, the report does mention that if they in fact would have needed extra personnel, there could have been a challenge because it is not clear who has the authority to govern a surge workforce. In addition, different health services and the municipal health services have based their surge in capacity frameworks on the same available workforce (DSB, 2010, p. 19).

The three most affected countries in Western Africa during the Ebola outbreak suffered from crucial shortages in health workers and other qualified response workers (UN, 2016, p. 35). In addition, many health workers became ill and died from the virus. The low number of health workers already lacking in these countries was a big problem. Guinea had 1 doctor pr. 10 000 inhabitant, Liberia had 0,2, and in Sierra Leone there was only 0,1 doctor pr. 10 000 inhabitant (UN, 2016, p. 36). Most of these doctors were concentrated in capitals and cities, leaving smaller communities and rural areas without adequate access to health services (UN, 2016, p. 36). The minimum standard recommended by the WHO is 23 doctors, nurses and midwives pr. 10 000 inhabitants (UN, 2016). As identified by Barbisch & Koenig (2006) challenges would be getting in-hospital, and out-of-hospital care. In Norway, there was already in place an existing structure of local health personnel, for example doctors. This was not the case in the Ebola outbreak, as an extensive infrastructure of health personnel was lacking.

Another major challenge during the Ebola outbreak was the lack of qualified health workers, several first-line responders noted this (UN, 2016, p. 48). Also, relevant expertise and knowledge about how an Ebola outbreak of this scale could be effectively contained was lacking - the pool of people with expertise in Ebola outbreaks was limited (UN, 2016, p. 48).

The training of surge staff was done so at record speed, but it cost valuable time (UN, 2016, p. 35). It was also reported that deployments were too short, causing knowledge transfer to falter, and breakdown of professional relationships (WHOd, 2015, p. 20). Some non-medical staff was reluctant to work in Ebola-affected countries, as absence of guaranteed medical evacuation was a key disincentive for staff to join the response effort in the affected countries (UN, 2016, p. 48).

Money

The Norwegian Health Department gave early signals on that the Health Directorate should spend around 30-50 million NOK on the purchase of drugs. It was also ordered that the regional health enterprises should obtain drugs and equipment for an equal sum of money. Most of this money went to antivirals, antibiotics, as well as some syringes and needles (DSB, 2010, p. 171). There is no overview of the Norwegian municipalities expenses, but there were not given any additional funding from state level to manage the pandemic (DSB, 2010, p. 50). The expenses were mainly linked to the vaccination of the general public, which the population payed for themselves (DSB, 2010).

In West Africa, there were some problems regarding the funding of the crisis response. Niang (2014) point out that, for example, Sierra Leone is an immensely rich country in raw materials, but with one of the poorest populations in the world. The reasons for poverty can be attributed to poor government. The WHO rely on voluntary funding as there are no immediately available standing resources (UN, 2016, p. 17). There are no core funds for emergency response (WHOd, 2015, p. 6). Dr. Bruce Aylward, who led the response to the Ebola pandemic, commented: “*We have the strategy, we have the infrastructure in place, we have the commitment of the people. The question now is: will we have the resources to finish the job?*” (WHOa, 2015).

Strikes by hospital staff and burial teams further decreased number of people available. Staff were not paid for weeks or months and did not receive promised hazard pay (WHOc, 2015).

Comparing Norway and the most affected West African countries then, there was quite early signals on mobilizing money in Norway, for example to vaccines. The problem with the Ebola outbreak in Western Africa was the already poor nations and that the WHO relies on voluntary contributions in fighting diseases. This made development of vaccines, and the procurement of goods a challenge.

Goods

The distribution of the H1N1 influenza vaccine in Norway was challenging. The Public Health Institute stipulated a fixed price for anyone that wanted to take on the assignment of vaccine distribution, but only got two offers, of which only one company satisfied the criteria. The company normally did distribution of fish vaccines (DSB, 2010, p. 96). There were great uncertainties on what time the deliveries were supposed to be done. Some of this blame stems from delays in the deliverances to Norway, while some blame is on the transporters for not informing the municipalities on arrival times, or changes thereof (DSB, 2010, p. 96). The other goods that were bought were perceived as being satisfied mobilized, according to a national survey (DSB, 2010, p. 171).

Equipment needed in the Ebola response on the other hand, such as cars, motorcycles, tents and beds were not always easy to procure, neither were equipment needed to protect health workers, e.g. suits, plastic buckets, disinfectant and gloves (UN, 2016, p. 48). Furthermore, unilateral border closures, and trade and travel restrictions, hindered the flow of response supplies to the affected countries (UN, 2016, p. 48). Many commercial flights suspended their flights to the Ebola-stricken countries, resulting in the use of special humanitarian logistics networks, while the absence of viable roads also led to the reliance on helicopters in some areas (UN, 2016, p. 48). Also, in for example Liberia, there were a limited number of ambulances, most of which were located in the capital Monrovia (UN, 2016, p. 37). This led to the use of taxies, or that family members had to carry the sick – effectively leading to an increase in infection. The lack of laboratories and isolation facilities meant that the sick and the healthy often were co-located in holding centers, which further increased disease transmission (UN, 2016, p. 37). Barbisch & Koenig (2006) recognizes that other functional areas will need to be in place for the health system to work optimally, such as personnel, logistics and transport – highly in in line with the missing infrastructures in the West African countries. In rural areas, the medication was hard to come by and often too costly (UN, 2016, p. 37)

For Norway, mobilization of the vaccine was the greatest challenge, mainly linked to the lacking quality and size of distributors. In Western Africa this was also a challenge, but there was also the challenge of mobilizing much needed medical and basic survival equipment. Poor general infrastructure was also a great challenge, resulting in helicopters sometimes being the only mode of transportation.

4.3.3 INCENTIVES FOR COOPERATION AND MESSY FRAMEWORKS

Many challenges in organizing a crisis response stems from the need to cooperate with other regions (Ansell et. al., 2010). Also, coordination within the response actor can be challenging. When a crisis crosses into a new sector, or functional area, even more challenges can emerge.

Cooperation with other regions

In Norway there seems to have been little cooperation between municipalities regarding vaccination (DSB, 2010, p. 156).

In the West African countries, the greatest challenge with coordinating with other regions (and in this case other countries) was to get them to start cooperating. There are clear disincentives for countries to report outbreaks quickly and transparently (WHOd, 2015, p. 11). The “Declaration of the Public Health Emergency of International Concern” is associated with stigma, and the declaration can be politically influenced whether to impose or not (WHOd, 2015, p. 10). The countries affected faced not only severe political, economic and social consequences but also barriers to receiving necessary personnel and supplies (WHOd, 2015, p. 11). Because of the anticipated stigma associated with a “Declaration of the Public Health Emergency of International Concern” there was no coordination between the West African countries until it was absolutely needed. To start cooperating with each other they would also have to accept the declaration, and in consequence the associated stigma. Early in the Ebola outbreak, cross border information sharing was inadequate (UN, 2016, p. 42-43).

One of the most crucial differences between cooperation between regions within Norway and the affected countries in West Africa is linked to sovereignty. The most affected West African countries are competing in the international markets. Import and exports of goods are important for accumulating wealth in the already economically pressured countries. It is not unusual that, for example, municipalities in Norway are cooperating in exterminating an external threat. It is important to remember that the municipalities in Norway are all connected through something overarching, namely the state level. They are also unable to impose negative economic measures on each other, through for example travel restrictions. This is not the case for the affected countries in Western Africa. These nations compete with each other, and the rest of the world. There are no governing bodies above state level, except maybe the UN, although in practice they cannot affect nations in the same way the state of Norway can affect its municipalities.

Given the power that the international community has to affect competition between states, I think it is important to understand that threats to trade and travel restrictions will have negative impacts on early inter-nation cooperation. Surely, it would seem logical for different nations to want to cooperate, but not if they are forced to see a large decline in their economy because of it.

Upwards-downwards coordination

The Norwegian Health Department appeared somewhat unclear in their role as the top level of national response actor. This was, in part because the department was too careful with expressing their expectations to other departments, and because the overarching coordination of the health sector was delegated to the Health Directorate (DSB, 2010, p. 13). Another important issue is how far the Public Health Institutes role as administrative body regarding the vaccines reaches, and how far the Health Directorate authority reaches in performing overarching coordination (DSB, 2010, p. 13). If the pandemic had been more severe, these issues could have led to challenges in for example the distribution of vaccines or who should be prioritized, as both the Health Directorate and the Public Health Institute administrative powers downwards in the response. The DSB report (2010) emphasizes that the national political boundaries should have had a higher grade of formalization to avoid potential conflicts of role and to ensure quality in decisions (DSB, 2010, p. 13). While it is the municipalities in Norway that has the overall responsibility in combating infectious disease, this responsibility is in practice transferred the chief municipal doctor. This can be challenging because many of the smaller municipalities only have this kind of doctor part-time, or not at all (DSB, 2010, p. 156).

The county governors and the municipalities told that reporting regime was too extensive, although they did understand the necessity of this reporting (DSB, 2010, p. 17). The total information volume was too big, and the same information could often come from different channels, or from multiple senders. Information from the different authorities was not adequately coordinated (DSB, 2010, p. 17). Half of the municipalities reported that there was a good balance between central management and local freedom, while a little above one third reported that there should have been a stronger central management (DSB, 2010, p. 162).

For the most affected countries in Western Africa, there was initially a lack of clarity over which entities within a national administration were in charge of coordinating the response, and which organizations should attend relevant meetings (UN, 2016, p. 37). In some cases, decision-

making was even slowed by inter-departmental rivalries and unclear reporting lines between the Ministry of Health, the National Ebola Coordinator and structures created by international partners (UN, 2016, p. 37). In some instances, existing national disaster response structures were not used and new structures were designed instead; it took several months for coordination structures at the capital level to be replicated nationwide (UN, 2016, p. 37).

The WHO should have played a key role in this coordination, but it took a long time to get started (WHOd, 2015, p. 19). In the early stages of the Ebola crisis, messages were sent by experienced staff about the seriousness of the crisis. Either these did not reach senior leaders or senior leaders did not recognize their significance (WHOd, 2015, p. 12). The WHO's longstanding culture is that of a technical organization setting international standards and assist in their implementation, and does not have a culture of emergency response (UN, 2016, p. 46-47). Even during the Ebola outbreak, the WHO's work often focused on monitoring epidemiological data and on advising ministries of health. The WHO's complex governance structure creates confusion as to which unit leads the emergency response (UN, 2016, p. 47). The WHO does not have an organizational culture that supports open and critical dialogue between senior leaders and staff, or a culture that permits risk-taking or critical approaches to decision-making (WHOd, 2015, p. 12). The WHO's response capacity in large-scale emergencies, shows that the biggest skill gap continues to be found in the area of crisis coordination and leadership (WHOd, 2015, p. 17). The Ebola emergency exposed the WHO's inadequate operational capacity, even when the organization recognized the escalating response needs, its internal administrative rules on human resources, procurement and finance did not facilitate the rapid deployments of staff or emergency response materials (UN, 2016, p. 48).

The WHO should have engaged the support of the United Nations Office for the Coordination of Humanitarian Affairs and other UN agencies and humanitarian actors through the United Nations' Inter-Agency Standing Committee early in the outbreak (WHOd, 2015, p. 24). In addition, the lack of clarity from the WHO over the inter-agency leadership and coordination arrangements for health crises delayed an effective response. This delay led the UN Secretary-General to establish the first United Nations health emergency mission. This mission catalyzed high-level political and financial support (WHOd, 2015, p. 8). The mission functioned by bypassing existing mechanisms, rather than by engaging the United Nations cluster system (WHOd, 2015, p. 24). A number of stakeholders at country level also reported that the mission was unwieldy, and said that it took two critical months to establish itself at the height of the

epidemic when parts of the existing cluster system could have been used instead (WHOd, 2015, p. 24).

In both the H1N1 influenza and the Ebola outbreak it was unclear who had the topmost authority. In Norway this situation lasted throughout the crisis, while in Western Africa this was sorted out after some time. The factors identified through the WHO's management can mainly be summarized like this: lacking dialogue between top leaders and staff, no culture for risk taking in decision-making, unsuitable internal administrative rules on human resources and slow and lacking understanding of inter-agency leadership and coordination arrangements for health crises. Most of these factors are attributed to the WHO being mainly a technical agency, and not a crisis responder. It surely is important to change the WHO into an agency capable of managing international health threats, but they are highly bureaucratic in nature. Thus, the agency may be reluctant to change itself, even when there are imposed orders from above. The factors for disease propagation that can be attributed to the WHO were also identified during the H1N1 influenza, and still the Ebola outbreak were able to claim the lives of over 10 000 people (UN, 2016).

Cooperating with other sectors

The pandemic in Norway was to a large extent managed within the health sector, but the county managers did express that there was good cooperation between the branch on contingency and the health departments (DSB, 2010, p. 138). The reason the Norwegian contingency sector and health sector were able to cooperate, can be explained by that the contingency sector probably had prior knowledge on how the health sector operates. Seeing as contingency penetrates the whole of society it is not unlikely that this sector had some previous knowledge of logics and operating imperatives within the health sector. This is corroborated by Ansell et. al. (2010) who states that information is most likely to flow between jurisdictions and organizations that have prior knowledge of each other.

During the Ebola outbreak on the other hand, cooperation between sectors was a key challenge. The health sector and humanitarian sector respond differently to a crisis, but the Ebola outbreak was large and complex, which required a combined health and humanitarian response (WHOd, 2015, p. 15). It is unclear how a public health emergency fits into the wider humanitarian system, and at what point an infectious outbreak becomes a humanitarian emergency that requires a broader UN response (WHOd, 2015, p. 23). Many donors, governments, the UN, the WHO and Non-Governmental Organizations understand only one or the other system (WHOd,

2015, p. 23). In part this was due to lack of understanding different approaches to risk assessment. In addition, the emergency grading levels do not coordinate well across the WHO's Emergency Response Framework, the UN's humanitarian system and the International Health Regulations (WHO, 2015, p. 7). The WHO's "Pandemic Phases" distinguish disease outbreaks in six phases. The WHO's "Emergency Response Framework" recognizes three grades of health emergencies and describes the WHO's responsibilities in each case. Also, the WHO is able to declare a "Public Health Emergency of International Concern" through the International Health Regulations (UN, 2016, p. 53). In the broader humanitarian system, the Inter-Agency Standing Committees "Framework for Classifying Humanitarian Emergencies" also consists of three levels, each with a different response mobilization implication (UN, 2016, p. 53). A lack of awareness of the four systems, combined with confusing terminology, contributed to misunderstandings between the health and humanitarian sectors in the early stages of the Ebola response.

It was also observed that strengthening health systems will be insufficient without support for complementary development programs that focus on water, sanitation, electricity, basic health care and other related needs (UN, 2016, p. 15). As the crisis unfolded, it became clear that it included several other dimensions besides health – such as water sanitation, hygiene, education and food security (UN, 2016, p. 51).

Two of the countries in Western Africa called upon their militaries to support health and humanitarian personnel. In Sierra Leone, the armed forces helped lead the health crisis response after the Minister of Defense was appointed as the National Ebola Response Coordinator (UN, 2016, p. 39-40). In the absence of adequate training in human rights, the use of militarized responses during the Ebola crisis did not always build confidence. Particularly challenging was quarantines, clashes between the Liberian military and civilians in the West Point area of Monrovia even led to one death (UN, 2016, p. 40).

As mentioned by Ansell et. al. (2010), management challenges can emerge when different sectors have to cooperate with each other, often because different sectors "*involve systems with different logics and operating imperatives*" (Ansell et. al., 2010, p. 196). This is easily identified during the Ebola outbreak, especially on how there was misunderstanding around the different logics and operating imperatives between the WHO's "Pandemic Phases", the WHO's "Emergency Response Framework", the WHO's "Declaration of Public Health Emergency of

International Concern” and the Inter-Agency Standing Committees “Framework for Classifying Humanitarian Emergencies”.

4.3.4 BLOOD HARVEST AND “*THE PEOPLE OF THE FOREST*”

This chapter will focus on the challenges that comes from communicating with the public, as there is a need to convey rumors, reports and situational pictures into correct information (Ansell et. al., 2010). The challenges will be divided into the main principles identified by the WHO (2008) for communicating infectious diseases.

Trust

In Norway, there was not really a problem of having to establish trust between the manager of the crisis and the population, as Norwegians are regarded as already having a high degree of trust. Trust is, as identified by the WHO (2008), crucial in communicating diseases. In West Africa, trust towards the governments was not already a fact. In the early days of the Ebola outbreak some people thought that Ebola had been brought into the country by political forces as a tool for domination or to make money (WHO, 2015, p. 72). One nurse even proclaimed that Ebola was about blood trafficking, that governments needed blood for sale in Western countries, and that all of those affected by Ebola was actually killed for this (Niang, 2014). She attracted a mob, resulting in a boy who got shot because parts of this mob started heading towards an Ebola treatment center to burn it down (Niang, 2014).

An issue regarding wildlife meat came to play an important role. The “bushmeat”, was understood by the natives as the cause of the disease (Niang, 2014). This sows disconnect for many, as the people and their ancestors had been living in the same ecological environment for centuries, hunting the same wild animals in the same forest areas, and had never before seen a disease like Ebola (WHO, 2015). The communication of “bushmeat” (e. g. fruit bat) as a source of infection was understood as an encouragement to keep away from the forest. From the perspective of local communities though, the forest is an individual and collective refuge; it protects, reconstructs, recycles, and most important: it treats and heals social and physical harm (Niang, 2014). The forest had been many peoples’ protector during the dreadful civil wars, which resulted in countless mutilations, between 100 000 and 200 000 deaths, more than 2 million internally displaced persons, numerous rapes, cases of sexual slavery, kidnappings, and the mass use of child soldiers (Niang, 2014). Decades of conflict have left the populations distrustful of governing officials and authority figures, including health professionals (Fauci, 2014, p. 1085). Zones of intense transmission were kept in the shadows, communities often

refused to accept investigations by foreign medical staff (WHOc, 2015). Because many communities were in a post-conflict situation, they had high levels of distrust in authority (WHOd, 2015, p. 20). Early messaging about Ebola portrayed the disease as a death-sentence, leading suspected patients to go into hiding rather than undergo testing (UN, 2016, p. 23). Many stories circulated about community members who took refuge in nearby forests to escape health workers, whom were coming for the infected. This birthed the expression of “*the people of the forest*” to describe community resistance against a cold biomedical power, that was coming for the populations blood and organs (Niang, 2014). This problem was reinforced by the delayed “Declaration of the Public Health Emergency of International Concern”, misleading Twitter messages, and leaked documents (WHOd, 2015, p. 21). The WHO failed to engage proactively with high-level media and was unable to gain command over the narrative of the outbreak (WHOd, 2015, p. 21).

While it is the WHO themselves who have developed the framework for how to communicate with the public in health emergencies, it seems like they did not follow it in their own management of the Ebola outbreak. Or more likely, they tried to follow it but were unable to, because of the high degree of distrust from the population. The WHO is used to having to establish trust in health emergencies, but I would argue that it came as a surprise that the population actively tried to undermine trust from authorities, because of previous experiences related to the civil war. This made all the other steps in the framework suffer, and all other communication and measures to be questioned and doubted. I would argue that a greater knowledge of societal conditions in countries prone to communication from international actors are needed, or else there is the risk of dealing with a distrustful population.

Early warning

The WHO was early to announce what the Ebola virus meant, but sadly it was perceived as a death sentence for the persons infected. People often did not want to have check-ups and many went into hiding. Instead of encouraging the infected to come forward, messaging drove many suspected cases to avoid testing, and led families to hide their sick (UN, 2016, p. 38). People perceived Ebola treatment units as meaning certain death – the health system was seen as propagating the disease (WHOb, 2015, p. 72). The framework for disease communication, created by the WHO, maintains that if those affected are alerted correctly it can minimize the rate of disease infection (WHO, 2008). What I would argue is a key word here is “correctly”.

By no means were the population alerted correctly if communication of the disease in fact led to the propagation of the virus, and not disease minimization.

In Norway there were also some comments and discontent on the communication being a bit too exaggerated. Surveys show that the population to a high degree was pleased with the information from the government, although a majority felt that the threat of the pandemic was exaggerated (DSB, 2010, p. 16). One press conference on the H1N1 pandemic stands as an example of how exaggerated the dangers of the pandemic were. During this press conference, the seriousness of the situation was underlined by both the Minister and Director of Health. The presentation showed the worst case scenario of the pandemic, predicting 13 000 deaths and showing pictures of health personnel in hazmat suits, face masks and a casket (DSB, 2010, p. 129). This image was the most used in the media during, and after, the pandemic, even though it was pointed out that this was not the most likely scenario.

Central professionals that advised the WHO and the Center for Disease Control and Prevention, pointed out that one should not hesitate in scaring the population if this is necessary to achieve wanted reactions (DSB, 2010, p. 189). I strongly disagree with this, as the Ebola outbreak is a shining example of what can happen if the population is scared and even tried coerced into certain reactions. At best, I would say that the “scaring” part has to be done so with a full overview of potential negative impacts it can have on the population. In any way, it reduces people to being seen as needing a shepherd, when they are in fact fully able to make their own assessment of the dangers regarding infections, if they are informed correctly. This is also one of the main points behind the framework for disease communication that the WHO developed (WHO, 2008).

Transparency

Furthermore, the WHO proposes transparency as a main pillar of disease communication (WHO, 2008). When the population goes as far as believing that the WHO have arrived in the country to harvest their blood and organs, it should set off some alarms within the WHO. Treatment centers being attacked was not uncommon, but sometimes those trying to explain to the community how to avoid infection also experienced violence (WHO, 2015, p. 72). In some incidents, response teams were forced to hide in the bushes, fearing for their lives (WHO, 2015). Some riots followed disinfection campaigns, as communities believed that the spraying of chlorine was actually spreading Ebola (WHO, 2015). One of the worst incidents of violence was when an 8-member team of outbreak responders was found murdered in a village (WHO, 2015).

2015). A second severe incident followed, when Red Cross volunteers who had safely buried a body in the town of Forecariah were attacked by an armed mob, and the angry crowd uncovered the fresh grave. The highly infectious corpse was removed from its body bag, and hid somewhere in the village (WHOc, 2015). It is emphasized that the interpretation of surges in violence is a call for more transparency into medical procedures (Niang, 2014).

It is not very uncommon that humans create meaning to things that they do not understand, and even more so when the things that are happening are perceived as evil. Disease have always been with us humans; thus it is not illogical to think that there have also been ways to explain them. This implies that every human community, spanning from small societies to large tribes and even regional or national cultures, can have their own explanation for disease origin and propagation. By not taking control of communication, the WHO in reality created a breeding ground for different interpretations of disease origin and propagation; anybody were able to make up their own reasons, and spread them to anyone willing to listen. The Ebola outbreak did, for example, birth numerous mythical explanations for the pandemic, many of which centered around unclean women (Niang, 2014).

In Norway, transparency was given to a great extent. The most central and important sources of information from the government was the internet sites “pandemi.no” and “fhi.no”, where 90 000 visited “pandemi.no” during the initial days of its launch (DSB, 2010, p. 126). The plan was that all information regarding the pandemic was to be published on “pandemi.no”, but it instead worked as a portal that linked to other net sites. The Health Directorate channeled most of the information through “pandemi.no”. although the net site contained to a very little degree information about other eventual consequences from the pandemic, only the health aspect was in focus (DSB, 2010, p. 126). There were produced a lot of information throughout the pandemic period, the central government developed downloadable schematics that the municipalities could use to communicate with both the population and the media (DSB, 2010, p 125). The government also developed posters, adverts in local papers, vaccination advices on the municipalities’ net sites, invitation letters to risk groups, invitation letters to health personnel and schematics for vaccine cards (DSB, 2010, p. 125).

Not only in Western Africa was there produced alternative interpretations to disease origin and propagation. There are cases of people who believe Norwegian government only had malicious intentions in different ways regarding the H1N1 influenza. Maybe this can be attributed to a failure in perceived transparency, not necessarily the Norwegian governments fault, but

somehow connected to not being able to acquire the correct information about what really happened during the H1N1 influenza pandemic. This can also be seen from the news sources that focused on assigning blame during the early period of the H1N1 influenza. They did not yet have complete transparency on what had really happened, which might have led to the production on alternative explanations (Carlsen, 2009; Foley, 2009; Morales, 2009; Philpott, 2009). All of which blame some kind of a wicked authority.

Listening

In Norway, journalists had the chance to express concerns during press conferences, and get instant feedback. These press briefings were also held to lessen the pressure from the media, 13 in total, where personnel from the Health Directorate and the Public Health Institute were present (DSB, 2010, p. 125). What really could be seen as effective listening to the public is from the use of social media. The use of social media was also regarded by the public as good, where they were able to get answer on questions regarding pandemics and vaccines (DSB, 2010, p. 126). This is in line with WHO (2008) on understanding the public's risk perceptions, views and concerns as a tool for effective communication and the broader emergency management function it supports.

During the Ebola outbreak however, no such listening occurred, at least not during the (precious) timeframe of the initial months. An attempt was made to burn a treatment center in Kenema, because no one had consulted the locals before installing an Ebola treatment center (or "Center of Death") right next to a maternity ward (or "Center of Life) (Niang, 2014). The close proximity between corrupting Death and nourishing Life infuriated the population. Traditional cultural practices, including funeral and burial customs, contributed to virus transmission, yet culturally sensitive messages and community engagement were not prioritized (WHOd, 2015, p. 20). The important concept of empathy with the sick, expressed through touching, washing and rubbing the body of the deceased led to many infections early in the pandemic (WHOb, 2015, p. 73). People were fed up with being told about hand sanitization, they knew how Ebola is transmitted but wanted to express themselves, be heard and take charge of their health matters (WHOb, 2015, p. 72). During the randomized-controlled trial of vaccines, affected population started posing ethical questions: If treatment is available, why is not everyone getting it? Is the need for data more important a human life? For the communities, it seemed like research data had more value than human life (WHOb, 2015, p. 73).

Planning

The communication strategy in Norway is based on the “National Pandemic Plan”, with clear cut goals and target groups (DSB, 2010, p. 16). The WHO (2008) adheres that public communication during an outbreak represents an enormous challenge for any public health authority, and therefore demands sound planning in advance. While this seems to have worked during the H1N1 influenza, it did not work during the Ebola outbreak, even though it was planned in advance.

One of the main reasons for this, I would argue, is that the Norwegian authority knows how the population will react – at least to a greater degree than the WHO knew how populations in Western Africa would react. The framework for disease communication is an overarching document, but it is important to understand that perception of messages sent are subjective and contextual, based upon the population that is experiencing the disease. It implies that there is no simple formula for good communication, as messages has to be constructed in such a way that fits with the diseased populations world view. The difficulty of effectively engaging communities was a problem that could have been foreseen had a social and political analysis been conducted to complement the epidemiological assessments (WHOd, 2015, p. 20). Although the framework probably will work in most cases, I would argue that it is important to understand, and plan for, differences in culture and degree of trust. This will, as highlighted by the Ebola outbreak, be a key measure to combating a pandemic.

4.3.5 MANY MECHANISMS FOR DISEASE PROPAGATION

Through a mapping and discussion of the core challenges that the governments of Norway and the affected countries in Western Africa and the WHO faced, it is possible to identify the main challenges that made disease propagation possible. Following the summary on core challenges set out by Ansell et. al. (2010), the main mechanisms for disease propagation will be presented:

First, in Norway there was not identified that much uncertainty as for the countries in Western Africa. Ebola virus propagation starts with uncertainty around the source of the disease outbreak, and we can even see that the government officials in Western Africa performed “deliberate uncertainty-making” in an effort to postpone the “Declaration of a Public Health Emergency of International Concern”. This worked, and the crisis was in fact formally postponed.

Next, mobilization of people, money and goods made combating the disease a challenge. It was worse for the affected countries in West Africa, than in Norway, as much logistics relied on general infrastructure, severely lacking for the Ebola-stricken countries. The need for professional health workers, the lack of funding to the WHO to combat disease, and the inadequate ability in distributing vaccines and goods being key elements.

Thirdly, the international community has the power to affect competition between states, through restrictions on travel and trade. This will, together with the stigma associated from being an infected country, act as a disincentive to acknowledge the disease, and cooperating with other states. During both the H1N1 influenza and the Ebola outbreak it was unclear who had the topmost authority. In Norway this situation lasted throughout the crisis, while in Western Africa this was sorted out after some time. The main factors stemming from the WHO being inadequate in managing the Ebola outbreak are: lacking dialogue between top leaders and staff, no culture for risk taking in decision-making, unsuitable internal administrative rules on human resources and slow and lacking understanding of inter-agency leadership and coordination arrangements for health crises. Combined with a lack of awareness of the different frameworks between the health and humanitarian sectors, organizing a response become even harder, and in effect propagated the disease.

Fourth, and last, there were great differences in communication with the public in Norway, compared to Western Africa. Norwegians are more trustful towards their own government, as it has not been involved in civil wars and atrocious violations against its population. Serious gaps in the early months of the Ebola outbreak, in terms of engaging with the local communities, made the WHO fail in establishing itself as the authoritative body on communicating about the Ebola crisis. Community resistance against the managers of the Ebola outbreak developed as a result of distrust, incorrectly conveyed messages, poor transparency, lack of listening to communities and inadequate planning – birthing the expression of “*the people of the forest*” as resistance against a cold biomedical power that was perceived as coming to harvest their organs and blood.

5.0 CONCLUSION(S)

Through a comparison of the H1N1 influenza in Norway and the Ebola outbreak in Western Africa, the research problem on what different reasons for pandemics, and mechanisms for disease propagation could be identified between Norway and Western Africa have been explored, discussed and answered.

Initially during the discussion, it was concluded that the H1N1 influenza and the Ebola outbreak were comparable, but that the Ebola outbreak was, somewhat, higher on the transboundary scale. Furthermore, while it was not initially the purpose of the research question, there surfaced some other findings when assessing whether the pandemics were comparable. The importance of having prepared a plan for delegating political authority and responsibility is one of them. The heavy reliance on the health sector showed how interconnected infrastructure is, and that health might be one of the most important sectors in securing community continuity. Finally, the WHO as custodians of a crisis is questioned, since it can lead to misinterpretation of the timeframe and how difficult a crisis should be to manage.

Second, I argue that the relationship between Norway and Western Africa is that factors such as international travel, deforestation, migration and land use create breeding grounds that, non-discriminately, can affect both developed and developing nations. The difference is that factors such as poverty, and absent or ineffective health and surveillance systems, will play a crucial role in facilitating the pandemic. It is pointed out that even though it is people in the rich countries that have the best chances in surviving an infection, the virus does not actually care how rich you are, naturally. If an outbreak is neglected, eventually it will spread to other parts of the world, developed nations as well. Thus, in order to solve a pandemic, it must be solved in the host country, or else it will only continue to serve as source of disease, spreading anywhere humans are.

Finally, the mechanisms for disease propagation have been identified through the core challenges in a crisis. Uncertainty did play a crucial role as propagator of disease, mainly through trying to postpone the crisis, I labeled this action as “deliberate uncertainty-making”. Furthermore, challenges in mobilizing people, money and goods made disease combat a challenge. Another mechanism is the stigma associated with being the host country of a disease. Unclear national roles regarding authority and responsibility, and the WHO not being a crisis responder, but mainly a technical agency, propagated disease through slow and inadequate management. Lack of awareness of the different international frameworks between the health and humanitarian sectors gives more time for disease to spread. Last, the failure to establish an authoritative narrative in communicating disease led to community resistance against the one who were trying to help.

The conclusions are based on the many points, findings and arguments made throughout the empirical investigation and discussion, summarized in Table 3 – Summary of finding

Table 3 – Main findings in Norway/H1N1 and Western Africa/Ebola

	Norway/H1N1	Western Africa/Ebola
Transboundary scale	Little international involvement, but national governance from top to bottom. A clear cut preparedness plan, dictating political and governing authorities. The crossing of functional borders was not a main concern, although there was involvement of some different sectors in the management. Shortcomings between when the crisis really happens and the WHO as the only custodians on defining an international health crisis.	Very much international involvement from top to bottom in governance. Great spread of political boundaries. Lacking knowledge on responsibilities. Complete failure of health systems had great consequences on sectors like trade, tourism and education. Illustrates a high degree of interconnectedness between the health and other sectors. Shortcomings between when the crisis really happens and the WHO as the only custodians on defining an international health crisis.
Reasons for pandemics	Factors such as international travel, deforestation, migration and land use create breeding grounds for pandemics Introduction of a new strain of influenza virus. Slow termination through immunization.	In addition to factors identified in Norway, poor health systems and poverty facilitate both likelihood and spread of emerging diseases. West African Ebola virus similar to previous outbreaks, other factors behind the increased cases. Slow termination through immunization, durable health systems had to be created first.
Mechanisms for disease propagation	<p>Not much uncertainty about the source of the H1N1 infection in Norway, because early warnings. There was some uncertainty around the evolution of the crisis, linked to the virus being able to change its properties. The strategy to terminate the crisis was through immunization.</p> <p>It is pointed out that lack of competent personnel could be a problem. Not clear who has the authority to govern a planned surge workforce. Health Department gave signals that money should be spent on vaccines and extra medical equipment. Citizens had to pay for vaccine themselves. Problems with distributing the vaccine.</p> <p>The municipalities in Norway did not cooperate much. The Health Department appeared unclear in their role as the top response actor. There should be more formalization of roles during health emergencies. Transfer of responsibility in combating infectious disease to the chief municipal doctor can be problematic. Mostly managed within the health sector.</p> <p>Trust did not have to be established. The H1N1 was exaggerated, pointed out that the population can be scared into reacting. Great transparency, through the use of internet sites. Most Norwegians have prior knowledge of how the health system works. Press briefings were arranged, allowing for concerns and instant feedback. Use of social media. Predetermined plan for communicating with the public in health threats.</p>	<p>Uncertainty about Ebola was complicated by factors such as weak health systems and poor surveillance, in addition governments tried to spread uncertainty in an attempt to postpone the crisis. Immunization was the final strategy to terminate the crisis, but there were great uncertainties around an already strained health system.</p> <p>There were crucial shortages in health workers and other qualified response personnel. Pre-existing lack of health infrastructure contributed to shortage. The WHO being voluntarily funded and not being able to pay workers for weeks and months at the time. Problems with procuring health equipment. Closed borders. Expensive and scarce medication. General overall poor infrastructure.</p> <p>Problems in getting states to cooperate, disincentives for countries to report outbreaks. Lack of clarity over national administration and coordinating the response. The WHO propagated disease through being a too technical agency. Lack of awareness of the different frameworks between the health and humanitarian sectors. Use of military for health response, decreased trust in government.</p> <p>Highly distrustful population, active attempts at undermining trust. Ebola perceived as death sentence, incorrect communication. People did not seek out treatment centers. Poor transparency, spurring alternative interpretations of cause and propagation. The population did not feel that their concerns were listened to. Followed a predetermined plan, but lack of understanding of cultural and societal conditions.</p>

Lenses, catastrophe, altruism and egoism

While the initial research problem might seem quite obvious to answer, the answers being what might even be deemed naïve, I would argue that it is fruitful to ask these question from new perspectives. In any way, the aim of my thesis has been to explore pandemics through theory on crisis management. These lenses have told a story of modernization, interconnectedness, governance, inequity, health systems, pigs, bats, crisis management and an international harvester of blood. It has highlighted many aspects that might have been hidden through, for example, economic-driven, political, international relation or societal theory studies.

Even though it should not be a surprise, it is quite surrealistic to think that it only takes one infected child, where there is lacking health systems, to almost force governments on their knees, launching national and international actions to combat an infectious disease. Virus mutation is random, and it is just pure chance that the H1N1 influenza or the Ebola virus did not mutate in a way that caused greater grievances for many more societies, developed nations included. How many times will a virus be able to originate from poor developing countries, and spread throughout the world, before one strain of virus actually have the potential to seriously damage global health? The United Nations stress that the emergence of such a virulent pathogen is entirely within the realm of possibility.

The fact that there are great uncertainties regarding future health threats shows the importance of incorporating crisis management literature with pandemic and epidemic response. Questions regarding, for example, top-down or bottom-up management, myths regarding populations, risk communication, risk perception, and political, societal and cultural differences need to be addressed in order to be better prepared for the next pandemic.

I would also like to highlight that both the H1N1 influenza and the Ebola outbreak are glaring signs for the world to help create basic medical surveillance and treatment facilities in the parts of the world that needs it the most. If not for altruistic reasons, the more developed nations should at least have it as motivation for protecting themselves.

I suppose some would find it rather poetic that the creation of a modern world, and its inherent inequalities, could facilitate an unprecedented global cataclysm through a more contagious, and deadly, strain of virus.

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1.0 LITERATURE REVIEW

After the initial search on “pandemics” in three of the better known journals on crisis management, I noticed that many researchers used “pandemic” and “epidemic” interchangeably when discussing them. This is not in line with the definitions provided during the introduction of the thesis. Thus, I should take in consideration that many research papers regarding crisis management might be left out when limiting to only “pandemics”. This led me to also include “epidemics” in this literature review.

As can be seen from Table 4, a total of 59 research papers were identified under “pandemics”, and an additional 108 research papers was included when searched with “epidemics”.

Table 4 - Research papers related to crisis management

Journal name	Number of research papers in initial search on “pandemics”
Journal of Contingencies and Crisis Management	35
Disaster Prevention and Management	19
International Journal of Mass Emergencies and Disasters	5
Total:	59
Journal name	Number of research papers in initial search on “epidemics”
Journal of Contingencies and Crisis Management	47
Disaster Prevention and Management	55
International Journal of Mass Emergencies and Disasters	5
Total:	107

This brings the total amount of research on “pandemics” and “epidemics”, in these three journals, to the number 139, after I removed the ones that showed up under both “pandemic” and “epidemic” (the overlap was in total 27 research papers). The years spanned from 1984 to 2016. This is shown in Table 5

Table 5 – Total number of relevant research papers

Journal name	Number of research papers combined (minus overlap)	Years
Journal of Contingencies and Crisis Management	67 (82-15)	1993-2016
Disaster Prevention and Management	64 (74-10)	2008-2015
International Journal of Mass Emergencies and Disasters	8 (10-2)	1984-2010
Total:	139 (166-27)	1984-2016

While there seems to be somewhat substantial amount of research on health threats and crisis management (Table 5), it is actually quite few of these research papers that are explicitly about managing pandemics and epidemics. Most research papers only mention pandemics or epidemics, and are in fact about other themes, as shown in Table 6.

Table 6 – Overview of themes

Theme of study:	Author(s):
Armed conflict and terrorism	Fischer III, 1999 Foxell, 1997 Marktanner, Mienie & Noiset, 2015 Perry, 2003 Wachira, 1997
Business continuity	Pheng, Ying & Kumaraswamy, 2010
Community response	Hughes, 1993
Consumer response	Frank & Schvaneveldt, 2014
Debris management	Ekici, McEntire & Afedzie, 2009
Drought	Munro, 2006
Earthquake	Baytiyeh & Naja, 2013 Gunn, 1995
Economy	Gehlich-Shillabeer, 2008
Ethics	Geale, 2012
Extreme stress	Gunderson, Crepeau-Hobson & Drennen, 2012
Flood	Abbas & Routray, 2014
Forest fire	Aini, Fakhur'l-Razi, Daud & Wahid 2006 Czaja & Cottrell, 2014
Fractal crisis	Topper & Lagadec, 2013
Human security	Atienza, 2015
Humanitarian assistance	Benini, 1993 Idris & Soh, 2014
Hotel crisis management	Swalha, Jraisat & Al-Qudah, 2013
Household water treatment	Clasen, Smith, Albert, Bastable & Fesselet, 2006
Incident command system	Jensen & Waugh, 2014
Industrial hazardous areas	Caragliano & Manca, 2007
Institutional failure	Ahrens & Rudolph, 2006
Interpretations	van Laere, 2013
Leadership	Devitt & Borodzicz, 2008 Jong, Dückers & van der Velden, 2016
Learning	Connolly, 2014 Crichton, Ramsay & Kelly, 2009 O'Brien, O'Keefe, Gadema & Swords, 2010 Robert & Lajtha, 2002
Linked crisis events	Ren, 2000
Mapping of hazards or risks, various trends of hazards or risks and the changing crisis	Adivar & Selen, 2013 Al-Madhari & Elberier, 1996 Alexander, 2016 Boin, 2005 Bradford et al, 1994 Eshghi & Larson, 2008 Fritzon, Ljungkvist, Boin & Rhinard, 2007 Helsloot & Jong, 2006 Mohammed & Rahman, 1998 Noji, 2001 Pokhrel, Bhandari & Bhandari, 2009 Rautela, 2006 Rosenthal & Kouzmin, 1993 Rosenthal & Kouzmin, 1996 Ruggiero & Vos, 2013 Shaluf, 2007 Shaluf & Ahamdun, 2006 Shiwaku, Shaw, Kandel, Shrestha & Dixit, 2006 Smet, Lagadec & Leysen, 2012 Turner, 1994 Unlu, Kapucu & Sahin, 2010 van Niekerk, 2015 van Voorst, 2015

Mass death	Phillips, Neal, Wikle, Subanthore & Hyrapiet, 2008 Scanlon, 2008 Scanlon & McMahon, 2011 Scanlon, McMahon & van Haastert, 2007
Media, communication, framing and information	Arlkatti, Taibah & Andrew, 2014 Bahir & Peled, 2015 Baldini, Oliveri, Braun, Seuschek & Hess, 2012 Bergeron & Cooren, 2012 Buus & Olsson, 2006 Cortiñas-Rovira, Pont-Sorribes & Alonso-Marcos, 2015 Harro-Loit, Vihalemm & Ugur, 2012 Friedman, Rose & Koskan, 2011 Koskan, Foster, Karlis, Rose & Tanner, 2012 Masys, 2004 Newsom & Mitrani, 1993 Nilsson, Alvinus & Enander, 2016 Palttala & Vos, 2012 Pan & Meng, 2016 Veil, Buehner & Palenchar, 2011
Multi-layered challenges	Lagadec, 2004
Organizations	Lalonde, 2007 Schulman, 2011
Policy implications	Ahn, Ha & Park, 2010
Political perspectives	Stark, 2010
Preparedness and planning	Ainuddin & Routray, 2012 Brattberg, 2012 Burns & Marx, 2014 Burling & Hyle, 1997 Frost, 1994 Iles, 1994 Mitchell et. al, 2016 Olofsson, 2011 Surjan & Shaw, 2009 VanVactor, 2012
Public-private partnership	Chen, Chen, Vertinsky, Yumagulova & Park, 2013
Recovery and reconstruction	Bates, & Peacock, 1989 Cuny & Tanner, 1995 Gupta & Sharma, 2006 Régnier, Neri, Scuteri & Miniati, 2008
Regime types	Chan, 2014 Seitz & Davis, 1984 Zhang & She, 2014
Riots	Quarantelli, 1993
Societal safety	Olsen, Kruke & Hovden, 2007
Symbols, rituals and power	't Hart, 1993
Vulnerability	McEntire, 2012 Nilsson, 2010

Some research papers were not related to pandemics or epidemics at all, in total 14, because the word “epidemic” or “pandemic” were mentioned in their reference list.

A majority of research papers that were about management of pandemics and epidemics were done so in the context of Western societies (Allen & Taylor, 2014; Baekkeskov & Rubin; Carrel, 2005; Connolly, 2015; Thorson & Ekdahl, 2005). Furthermore, many of the research papers are not proposing *how to* manage a pandemic or epidemic, but how different pandemics

and epidemics *were managed*, analyzed from different angles based on the whatever disciplinary school the researchers come from (Allen & Taylor, 2014; Benini & Bradford-Benini, 1996; Connolly, 2015; ; Gstraunthaler, 2008; Neal & Younis, 2006; Sinha, 2000). Although it is interesting to see how pandemics and epidemics were managed, they do not write about how to manage in developing countries. Much of this research write about how existing systems for management failed (see for example Neal & Younis, 2006). I would argue that this is not quite transferable to developing countries, where the highest probability of epidemics and pandemics are. Many of these countries lack the necessary infrastructure or systems to manage health threats from, and is in need of international assistance. This is also noted by Benini & Bradford-Benini (1996) which points out that poverty, and low international status, makes the affected country rely on foreign organizations to respond to the epidemic. Noji (2001) further points out the sad irony that the countries with the most significant health threats are also the least capable of effectively dealing with them.

Sinha (2000) proposes a framework for managing plague epidemic, which is not in the context of a Western society. It is based on a developing country and shows how the community itself should manage the health threat. While this research would seem to fit my criteria, it is only isolated to small scale management, and not pandemic proportions.

I did, however, identify a few research papers that propose overarching models for natural hazards crisis management where epidemics and pandemics were mentioned briefly, but these do not focus explicitly on management of pandemics or epidemics. (Metri, 2005; Moe & Pathranarakul, 2006; Moe, Gehbauer, Senitz & Mueller, 2007; Kapucu, 2006). As this research is not built around empirical studies on epidemics or pandemics, but for example tsunami (Moe & Pathranarakul, 2006) or flood (Moe et. al., 2007), I am reluctant to propose them as framework for pandemic and epidemic management. Although there is a lack of pandemic and epidemic focus, there most certainly are elements from these studies that might be of interest for management practices.

There are research papers in medical journals that have a variety of keywords like “pandemic response management”, “pandemic emergency management” or “epidemic response”, but most of these seem to be related to how isolation of the virus strain should be done, or the importance of vaccine creation. Although some mention quarantine as a measure to stop disease spread (Cox, Tamblyn & Tam, 2003; Fineberg, 2014; Layne, Monto & Taubenberger, 2009; Kelly, 2010). It seems like the medical perspective on how to manage a pandemic, or epidemic, is seen

as how one should treat an illness in a patient, the patient being the region that is affected by a pandemic, or an epidemic. As seen in Table 7 there are 13 877 research papers that are related to “pandemic management”, and 23 126 related to “epidemic management”, combined over 37 000 research papers. I also suspect that there is not so much overlap between pandemics and epidemics from the medical community, as they are more educated in medical science, and more strictly separate them. If I also were to include other key words like “pandemic response” or “epidemic emergency response” the number of research papers will grow even more. A larger review of the medical viewpoint in relation to crisis management and pandemics is thus needed to fully understand how the medical community believes a pandemic should be managed. The fact that most research on pandemics and epidemics are medical may not be surprising, but I would argue that a pandemic (and an epidemic) is more than an illness, it is in fact the management of a crisis, in which curing the illness is a part of it.

Table 7 – Medical research papers

Journal name	Number of research papers on “pandemic management”	Number of research papers on “epidemic management”
The New England Journal of Medicine	174	3823
Clinical Infectious Diseases	8810	10 851
Journal of Infectious Diseases	4893	8452
Total:	13 877	23 126

A review study by Adivar & Selen (2013) of 74 publications shows that it is the field of biology and medicine that has researched epidemics the most. The aim most of these studies is to assess potential health implications. Further, epidemic management through vaccination and quarantine are the most proposed measures of control policies during epidemics. Because of this different focus of research between the social sciences and medical science, and the sheer amount of medical research papers on the subject, I have opted to not include medical research papers in this thesis.

2.0 A BRIEF HISTORY OF THE WHO

Between 1816 and 1899 there were six global cholera outbreaks, with origins from different parts of the world (Markel, 2014). The reason these pandemics came into action was by the growth of social and economic explosion from the industrial revolution. Steam-driven transport, railways and more open borders for trade meant people came much closer each other, and thus also their diseases (Clift, 2013). Cholera posed great concerns to public health, and thus, an the first International Sanitary Conference were held in 1851 in France. The aim of this conference was to reach an agreement on minimum maritime quarantine requirements, while also

upholding international trade. Sadly, there were no scientific consensus that cholera was being spread from sick to healthy, instead there was a myriad of different theories on how cholera, and in general epidemics, spread (Clift, 2013; Markel, 2014). Many more conferences were held, but none of them managed to get to the ratification stage. It was not until 1892 that the first convention was ratified (7th International Sanitary Conference), resulting in maritime quarantine during cholera outbreaks, and only ships westbound from the East. In 1903 at the 11th conference, plague and yellow fever were incorporated in one overarching convention. (Clift, 2013). These conventions can be seen as, at least in relative modern times, first public measures to manage pandemics.

In 1907, the Office International d'Hygiène Publique was established in Paris with its main objective to collect and disseminate information on public health, particularly regarding cholera, yellow fever and plague (Clift, 2013; Markel, 2014). In the aftermath of the Second World War and the recognition of Hitler's holocaust, and other atrocities committed by combatants, humanitarians and world leaders urged to put warfare to rest and instead focus on the development of effective and equitable economy. Political and public health measures that were fair for all people around the world was also of focus. It was with these ideas in mind that the United Nations was chartered in 1945, and soon, the World Health Organization (Markel, 2014). The objective of the WHO is stated as "*the attainment of all peoples of the highest possible level of health*". (WHO, 1948, p. 1). Equity in health standards being a key concept. Thus, through the world's slow developmental realization of global health concerns, and the need for some kind of management thereof, the WHO became the leading organ when dealing with health-related issues. Gostin, Sridhar & Hougendobler (2015) underlines this point:

"The Constitution unmistakably establishes the WHO as the premier global health leader, stating that it should 'act as the directing and coordinating authority on international health work' – working in close collaboration with UN agencies, national health ministries, and professional organizations (Article 2)." (Gostin et. al., 2015, p. 855).

Many other researchers, and also the WHO itself, further points out the role the WHO plays in global health governance (Clift, 2013; Lidén, 2014; Markel, 2014; Ruger & Yach, 2009; WHO, 2005).

In 1951, the WHO member states adopted the International Sanitary Regulations. This regulation evolved into the International Health Regulations (IHR) in 1969. Further revision of the IHR was done in 1973, 1981, and finally in 2005 a fully revised version was adopted (WHO,

2015). The IHR is a result of the WHO's Constitution that gives it the authority to adopt regulations concerning sanitary and quarantine requirements, designed to prevent international spread of diseases (WHO, 1948). Furthermore, the IHR declares that its purpose is to prevent, protect, control and provide public health response to the international spread of diseases (WHO, 2005).

In an interview with the New York Times, Director-General, Dr. Margaret Chan tells that it is not the WHO's task to respond to pandemics, but the affected country itself. The WHO should instead provide technical expertise: *“First and foremost, people need to understand the WHO. The WHO is the UN specialized agency in health. And we are not the first responder. You know, the government has first priority to take care of their people and provide health care. The WHO is a technical agency”*. (Fink, 2014). Dr. Chan has “rephrased” herself in a later interview saying, *“Disease outbreak response is, in fact, in our Constitution* (Fink, 2015). Thus, also the leader of the WHO states that it is in fact the WHO that should manage pandemics, because no other health agency has the mandate (or capacity) to manage the health aspect of a pandemic (Fink, 2015).

APPENDIX REFERENCES

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