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Inequalities in Health Outcomes Among Users of Prenatal Care

*A systematic review of prenatal care offers and
their outcomes under three varying health care
systems*

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Abstract

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Significant inequalities in the efficacy of prenatal care exist across the globe, even in high-income, highly developed countries where one may intuitively assume otherwise. Research shows that these inequalities are largely avoidable, and are the cause of myriad negative health outcomes including maternal and infant mortality, preterm birth, low birth weights, and more. Additionally, these health outcomes are exaggerated to shocking degrees among certain social groups. This study aims to compare inequalities in pregnancy outcomes through a comparative analysis of the prenatal care service offers in Norway, the Netherlands, and the United States. The analysis is followed by an empirical mapping of the trends of adverse health outcomes in each respective country in order to ask: what type of health system configuration results in less systemic inequality?

Using the frameworks of the World Health Organization's recommendations for a "positive pregnancy experience", health equality/equity theory from Norman Daniels, and a prescriptive, normative approach, this thesis examined differences in the problems of inequality faced by three countries. It was found that although all three countries aligned with the WHO's recommendations, stark inequalities remained. Therefore, no conclusions could be drawn correlating the type of system to greater or lesser inequalities. The findings indicate that greater social factors (social determinants of health) act alongside prenatal care utilization to maintain inequalities among the observed populations. Consequently, it is suggested that policies aimed at reducing inequalities in health also address the social determinants that affect one's societal positioning.

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To my parents Jodi and John,

*Because of my upbringing and the depth of love I have always felt from you, I have been given more opportunities than I would ever have the time to individually name. Through that, this has been possible.
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List of Abbreviations

- ACA – Patient Protection and Affordable Care Act (also “Obamacare”)
- CDC – Centers for Disease Control and Prevention (US)
- CHIP – Children’s Health Insurance Program
- CMS – Centers for Medicare and Medicaid Services
- DHHS – Department of Health and Human Services (US)
- GP – general practitioner (also known as “family doctor”)
- HIC – high-income country
- ICESCR – International Covenant on Economic, Social and Cultural Rights
- MDHHS – Michigan Department of Health and Human Services
- MLCC – midwife-led continuity of care (model)
- NHS – National Health Service
- OECD – Organization for Economic Cooperation and Development
- OOP – out-of-pocket [payments]
- RHA – Regional Health Authority (Norway)
- SAMM – severe acute maternal morbidity
- SES – socioeconomic status
- SGA – small for gestational age
- VHI – voluntary health insurance
- WHO – World Health Organization

Chapter 1: Introduction

Ample research has been performed on inequalities all over the world, and a significant portion of that research addresses inequalities of health, whether directly or indirectly. Women's health and access to health care has become one of the primary indicators used on an international level for measuring a state's level of development. And prenatal care, specifically, is an oft-referenced sector of services due to its frequency and unfortunate tendency for adverse outcomes. For example, non-Hispanic Black women in the United States experienced maternal mortality at a rate of 41 per 100,000 live births in 2016, this was 3.2 percent higher than the rate among non-Hispanic White women of 12.7 per 100,000 (Centers for Disease Control and Prevention, 2019-a). These adverse outcomes are the center of a multitude studies that exist in an attempt to improve women's health and standards of living globally. Three high-income and highly developed countries will be the focus of this thesis, because in 2020, frequent adverse pregnancy outcomes such as preterm birth, low birth weights, fetal and maternal mortality, and other consequences of ineffective care persist in these countries. Moreover, many negative pregnancy outcomes are exacerbated among certain social groups, even in countries with such exorbitant wealth that one may, intuitively, assume otherwise.

This thesis attempts to empirically map what kinds of social inequalities are found in prenatal care outcomes, and to what degree they affect the populations of three highly developed countries – Norway, the Netherlands, and the United States. Further, it seeks to answer: is there a health system framework – between a national health system, a largely private, or a mixed social system – that results in more equality between pregnant women¹, as measured by their health outcomes? This paper will use a “right to health” perspective based in literature from the World Health Organization, health equality and equity theory from myriad sources, normative theory, and definitions of positive and negative rights to assess which of these three health insurance and provision systems provides its pregnant users with more frequent positive outcomes. Comparative health policy analysis will be performed through the aforementioned theoretical lenses and information from government sources. The comparative analysis will serve to elaborate on system characteristics, similarities, and differences in the studied countries' approaches to health care. Trends in inequalities will be

¹ In this paper, “woman” will be the pronoun used to describe the individual experiencing pregnancy. Similarly, “mother” will be the parental title used to describe the pregnant individual. The author understands that not all those who can and do become pregnant identify by these terms.

studied, and a discussion will follow that ascertains whether these inequalities are perpetuations of the systems or if they extend beyond health system configurations. As a result, it will become clear how public health is prioritized between varying groups in the three countries. This paper seeks to find who the “winners” and “losers” of each system are.

1.1 Selection of countries

This paper analyzes prenatal care services offered in three countries: Norway, the Netherlands, and the United States. These countries were chosen because each has a different system of health insurance, regulation, and care provision, spanning a spectrum from state-owned and publicly provided to privately-owned with largely private provision. Because the United States’ health insurance and care legislation varies across the country and differences are specific to the individual states, the state of Michigan will be analyzed. In addition, Norway, the Netherlands, and the United States (Michigan) are all considered highly developed, high-income countries (HICs) by international standards, and their similarities pertaining to these two measurements outweigh their differences. With such similar levels of development and wealth, the substantial differences in health insurance and care provision, financing, and governance between the three are what led to their being chosen for analysis. It is the hope that trends of inequalities in prenatal health will make themselves known and remain specific to the individual systems so it is possible to draw conclusions about what type of configuration provides the most equal prenatal care to its inhabitants.

1.2 Motivation

Pregnant is a health state that many women will find themselves in over the course of their lifetimes – in 2018 alone, Norway had 55,120 live births in a population of approximately 5.3 million (2.6 million registered women) (SSB, 2020); the Netherlands had 168,000 births to a population of approximately 17.3 million (8.7 million registered women) (CBS, 2019); the United States had 3.8 million births from 328 million (164.7 million registered women); and Michigan had 110,000 live births from 9.9 million inhabitants (5 million registered women) (Centers for Disease Control and Prevention, 2019-b; US Census Bureau, 2020). But of course pregnancy is not unique to only some places; it happens in every country across all demographics and women have become pregnant for many, many years. Therefore, this paper considers pregnancy as an equalizing condition – a condition that countless women will experience at least once over the life course. With this in mind,

prenatal care services are a fair place to start when it comes to researching health inequalities across demographics.

One may be hesitant to believe that there are glaring inequalities in prenatal care provision and health in high-income countries (HICs). But unfortunately the inequalities are plentiful and ultimately avoidable. In other words, inequities in health exist in even the most developed of countries. These differences in patient experience and outcome from such a regular and natural process are my motivation for seeking to compare inequalities in the health systems of three HICs. Beginning in the 21st century, international organizations such as the WHO and the Organization for Economic Cooperation and Development (OECD) began to measure maternal mortality, or death during or immediately following childbirth (up to 42 days post-natal as defined by the WHO), as a significant development indicator of the health and care delivery system of states (WHO, 2019; Currey, 2000). With the establishment of complication-free pregnancy as a common and technically/medically simple health condition with little need for excessive intervention, this author posits that prenatal care services have every possibility to be effective, safe, and as equal as possible, and they must be in order to contribute to the creation of a healthy and equitable society.

Chapter 2: Analytical Framework

2.1 Prenatal care

Prenatal care (interchangeable with ‘antenatal’ and ‘maternity’ care) as defined by the World Health Organization refers to the care provided by health care professionals to pregnant women and adolescent girls in order to ensure the best possible health conditions for mother and baby during pregnancy. According to the WHO’s *Recommendations on Antenatal Care for a Positive Pregnancy Experience* (2016), prenatal care is composed of: “risk identification; prevention and management of pregnancy-related or concurrent diseases; and health education and health promotion” (p. 1). The WHO uses a human rights/right-to-health framework to establish relevant and necessary recommendations for prenatal care service provision, based on the advice of health care professionals and a systematic review by Downe, Finlayson, Tunçalp, and Gülmezoglu (2015) which reports that what women from a range of cultural and socioeconomic backgrounds want is a “positive pregnancy experience.” In Downe et al. (2015, p. 529), the important aspects of a positive pregnancy experience are explained as:

maintaining physical and sociocultural normality; maintaining a healthy pregnancy for mother and baby (including preventing or treating risks, illness and death); effective transition to positive labour and birth; and achieving positive motherhood (including maternal self-esteem, competence and autonomy).

Both the scoping review from Downe et al. (2015) and the WHO’s (2016) recommendations for a positive pregnancy find that the pregnant woman focuses not just on the treatment of pathology and avoidance of morbidity, but also on the maintenance of health and well-being through women-centered care. This holistic view of service provision aligns with the WHO’s definition of rights in the *Recommendations on Antenatal Care* (2016, p. 1) as they are explained in the following:

International human rights law includes fundamental commitments of states to enable women and adolescent girls to survive pregnancy and childbirth as part of their enjoyment of sexual and reproductive health and rights and living a life of dignity.

Throughout this paper, these expectations of care will be the standards for prenatal service provision in each individual country. Meeting these criteria signifies a country’s commitment to provision of effective services, and further, health equity.

Establishment of terms

An understanding of the human right to health is vital to the framework for this study. The Constitution of the World Health Organization (2020) defines this right:

the enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition. The health of all peoples is fundamental to the attainment of peace and security and is dependent upon the fullest co-operation of individuals and states, (p. 1).

In the context of this paper, the protection of health is focused specifically on pregnant women and the child(ren) they eventually give birth to. Thus it is established that pregnant women have the right to the “highest attainable standard” of health regardless of discriminating factors of identity. It can subsequently be inferred that to bring healthy people into existence, the women carrying them must be able to enjoy this human right with equal treatment and respect, and receive care that aligns with the recommendations of the World Health Organization.

The United Nations’ International Covenant on Economic, Social and Cultural Rights’ (ICESCR) *General Comment 14* will also be used as a reference for the right to health. *General Comment 14* (2000) states “every human being is entitled to the enjoyment of the highest attainable standard of health conducive to living a life in dignity,” (p. 1) and “takes into account both the individual’s biological and socio-economic preconditions and a State’s available resources,” (p. 3). With this definition, an individual’s reality is accounted for. For example, the prior, chronic, or untreatable health conditions that may lower an individual’s overall quality of life are considered when defining “highest attainable standard”. Therefore, a woman’s prior health status and the resources made available by the state are accounted for when considering her experience with prenatal care and pregnancy. Keep in mind that this does not excuse states from controlling for truly equitable prenatal services or preventing certain groups from existing in circumstances of inequality in the first place. Aside from the human right to health, which is the specific focus of *General Comment 14* (2000), the ICESCR fundamentally recognizes the inherent rights to freedom, justice, peace, and dignity of all people. The three studied countries have signed the ICESCR, indicating an intention to comply – Norway signed in 1968, the Netherlands in 1969, and the US in 1977. But interestingly enough, the United States has yet to ratify, meaning it is not legally bound

to actualize the fundamentals of the covenant by international law. The US stands as one of four countries to have signed the covenant without also ratifying it.

The definition of health in *General Comment 14* is more reasonable than the WHO (2020)'s definition – “a state of complete physical, mental and social well being,” – as it supposes a woman cannot necessarily expect to find herself in a *better* condition of health upon becoming pregnant and does not refer to a seemingly insurmountable standard of *complete* well-being. The UN Economic and Social Council (2000) also mentions the obligation of states to provide their inhabitants with timely and appropriate health care as well as access to “underlying determinants of health,” (p. 3).

The underlying (social) determinants of health are the circumstances under which individuals are born and raised, and where they work, live, and age that contribute to their health status (Artiga & Hinton, 2018). Social determinants of health can include: socioeconomic status, level of education, one's immediate physical environment, job/career, and of course their access to health care. These are often primary inputs into health inequalities witnessed among certain groups, and are largely impacted by governmental policy, public funding, and the reallocation of resources. Social determinants of health will play a significant role the discussion of findings. Regarding prenatal care, health and the right to health cannot be fulfilled to their greatest potential without both care provision and social structures that result in all women receiving respect and equal treatment throughout the pregnancy, labor, and birth experiences, in addition to throughout the life course.

With these definitions in mind, for prenatal care to be considered adequate, it must be equally available to all and fulfill the standard of being woman-centered care that considers the physical, personal, and sociocultural realities of each individual pregnant woman or girl. The care must be aimed at guaranteeing a positive pregnancy experience in which health and well-being are maintained; risks and illnesses are prevented and/or treated; labor and birth are transitioned to effectively; and motherhood is approached with self-esteem and competence. Specific details of these measures will be laid out further later.

In accordance with Norman Daniels' (2007) presumptions of health equity (explained in the next paragraph), equal access will be defined as the individual's ability to utilize prenatal care services regardless of any intersection of identity including, but not limited to: race, age, gender, sexuality, socioeconomic status (income), ethnicity, citizenship status, and location. Downe et al. (2015) explain that women require their health care system to provide prenatal care that is “available, safely accessible, affordable, [and] good quality,” (p. 533). Therefore, data or information found that proves discrepancies in individuals' access to

services based on any of these factors will be considered as discrediting the efficacy and equality of access, and therefore full legitimacy of an individual state's health insurance offer. As stated previously, inadequate prenatal care and adverse outcomes often raise suspicion about the capabilities of a nation's entire health care system. Inequalities in health outcomes of the very common and relatively simple (save complications) set of services that is prenatal care will consequently and justifiably be assumed to extrapolate to the larger health care system and its accessibility, progress, and equality as a whole.

In order to discuss inequalities in health and health outcomes for users of prenatal services, inequalities and inequities must be understood as two separate, albeit similar, terms. Health inequalities can be defined as differences in the health status of two groups while health inequities are "systematic differences in health status or in the distribution of health determinants between different population groups," (Sreenivasan, G., 2018; WHO, 2017). Health inequities are inequalities which are "avoidable, unnecessary, and unfair" (Daniels, 2007), existing between groups based on aspects of demographics such as socioeconomic (income, education, social status and class), ethnicity, gender, and geography (urban vs. rural, different regions). Inequalities in health are also inequities when they result from "unjust" distributions of controllable factors (Daniels, 2007). Again, social determinants are largely controllable at the governance/legislative level, and therefore inequalities of health as consequences of legislation should be labeled inequities.

Using the WHO's *Recommendations on Antenatal Care for a Positive Pregnancy Experience* and the established definition of equality of health, normative statements will be made about what legislative configurations create more equal prenatal care provision and outcomes. If the aim is reducing inequalities, the hope is to find trends that support the hypothesis that there are different ways of regulating that result in more (or less) equity. In order to make conclusions about what systems produce the most equal health outcomes, a normative lens will be used through which to make prescriptive statements about how legislation *should be*. This lens will adhere to the Dictionary of Human Geography's definition of normative theory by stating standards and proposals "that involve criticism of present arrangements and thus calls for change in order to create a better future," (Castree, Kitchin, & Rogers, 2013). The prescriptive element of my hypothesis is further supported by *Normative Foundations of Global Health Law*. In this publication, Ruger (2008, p. 5) makes normative statements about the intrinsic value of equal health care access by positing that

all individuals should have equal capability to be healthy...if we value, intrinsically and instrumentally, individuals' capabilities to be healthy, we regard deprivations of

health capabilities as inequalities in individuals' capabilities to function. Decrements in a person's health constitute direct threats to his or her well-being and agency.

Health capabilities are therefore prerequisites to other capabilities, and their moral importance calls for a sense of urgency.

Statements like these are part of the motivation for this presentation. Depriving individuals of their human right to health is depriving them of their full capabilities to function equally. For pregnant women of varying social demographics to experience inequalities in their respective health care systems is not only unfair but acts against the understanding that all people have the equal right to agency and to living life without deprivation of their potential. Without equality of health, we cannot expect that different groups are allowed the right to living their fullest and most satisfying life.

2.2 Recommendations of the WHO

The WHO (2016)'s recommendations for a positive pregnancy experience suggests a number of interventions for creating an equal standard of prenatal care. These interventions are categorized into: nutritional needs, maternal and fetal assessment(s), preventive measures, interventions for common physiological symptoms, and health system interventions. These categories include the following specifics for HICs:

- Nutritional interventions: counseling on healthy eating and keeping physically active during pregnancy (p. 15); daily iron and folic acid supplements (p. 23);
- Maternal and fetal assessments: prenatal screening for pre-eclampsia (p. 40); hyperglycemia detection as a test for gestational diabetes (p. 48); tobacco exposure (p. 49); substance use (p. 50); HIV and syphilis testing (p. 51); at least one ultrasound scan (p. 57);
- Preventive measures: tetanus vaccination (dependent upon previous vaccination) (p. 70);
- Interventions for common physiological symptoms including: nausea and vomiting, heartburn, leg cramps, low back and pelvic pain, constipation, varicose veins, and edema (p. 70-81);
- Health system interventions: midwife-led continuity of care (MLCC) models (p. 89); prenatal care contact schedules (minimum of eight contacts) (p. 101); task-shifting components (p. 99).

With the assumption that the other recommendations are self-explanatory, what follows is more detailed information on the recommendations that may be less universally understood:

- Midwife-led continuity of care: suggests that a midwife (or group of midwives) “supports a woman throughout the antenatal, intrapartum and postnatal continuum,” where functioning midwifery programs exist (WHO, 2016, p. 89). It is also recommended that in settings without extensive midwife programs, that policymakers consider enacting such a model to support better continuity of care. Midwives act as the primary caregiver among pregnant women in the Netherlands and Norway, although one’s GP is also available for such services. In the United States, it is more common that a pregnant woman receives care from an obstetrician/gynecologist.
- Contact schedules: WHO (2016) recommends a minimum of eight contacts with a health care provider, with one during the first trimester (up to 12 weeks), two in the second trimester (at 20 and 26 weeks of gestation), and five in the third trimester (at 30, 34, 36, 38, and 40 weeks). The interventions suggested for each individual contact are included in *Recommendations on Antenatal Care* (p. 105).
- Task-shifting: a suggestion to shift the task of promoting health-related behaviors to a broader group of providers including lay health workers, midwives, nurses, and doctors (WHO, 2016, p. 99).

Importance of cost

In accordance with the World Health Organization’s suggestions for a positive pregnancy experience, and with support of the UN Economic and Social Council, this paper will also take into account the cost of prenatal care services to the user (out-of-pocket, cost-sharing, deductibles, etc.) as a variable related to accessibility and equality. It is assumed that more equal access to services (through lower cost) will subsequently translate to more positive and equal pregnancy experiences.

2.3 Hypotheses

My hypothesis is that Norway, followed by the Netherlands, will exhibit the most health equality in prenatal care outcomes, with the United States (Michigan) exhibiting the most inequality in outcomes. This hypothesis is drawn from the intuition that greater universal coverage at the lowest cost to the user will result in more equity because the system itself is created in a way that promotes equal accessibility. It seems natural to assume that all

(or a larger proportion of) individuals can and will access prenatal care services if those services are of little or no out-of-pocket (OOP) cost to them, and especially when they are covered by a universal health insurance and care scheme. In addition, I hypothesize that Norway and the Netherlands, both with rather integrated regulation and/or provision of services from a governance level, will have fewer issues with social health inequalities correlated to social determinants of health. This author assumes that in countries with significant contributions to a universal health care system functioning under the principles of equal coverage and access for all, health is seen as a human right. And because health is understood to be a human right, I hypothesize that these types of systems will consider other aspects of human services (social determinants) as human rights that are worth investing in for the betterment of the population. I further hypothesize that what services are covered under a nationally regulated health care system (such as Norway's and the Netherlands') will prove to align more closely with the services recommended by the World Health Organization (WHO) than do services offered by a private system where more fragmentation and less universal regulation exists.

This thesis will systematically describe and compare three significant and varying health care systems in three developed, high-income countries. Prenatal service offers and how well they align with the recommendations of the WHO will determine how much each country prioritizes the equal right to health. Through the aforementioned inequity/inequality and normative theory frameworks, I will empirically map inequalities in health outcomes experienced by pregnant women of varying demographics in their respective countries. The findings will contribute to a normative discussion on shortfalls in the individual systems, and through comparative policy analysis, suggestions for how states may more effectively address health inequalities will be represented.

Chapter 3: Methods and Data

The research and information included in this study has been taken from a variety of sources. Being that this analysis serves to compare the health systems in three countries, I turned to an international organization, the United Nations, for theories and literature on topics related to human rights and health. Most of the information relevant to prenatal care definitions, offers, and suggestions for provision came specifically from the World Health Organization. In order to create a framework for what health equality and equity would mean in the context of prenatal health, as well as to develop a critical lens through which to analyze the offers and outcomes in each country, Norman Daniels' (2007) highly referenced health equity/equality theory and general normative theories were defined. With the contribution of authors who have expanded on Daniels' work, extra support was gathered to better establish a consensus on what is meant by 'systemic' inequalities. Normative theory is important in this paper for both justification of the critical country comparisons and an understanding of my motivation for writing. I cannot make such assertions as "everyone *should* have equal rights and access to necessary health care services" without the establishment of a normative framework. Normative prescription also acted to distinguish between positive and negative rights in the individual systems. This author believes that comparative health policy analysis requires a reference to positive and negative rights in order to understand variations in how one country or state views the rights to health and health care, and these definitions are included in the findings.

To collect data on how each individual health care system functions, I analyzed Blank, Burau, & Kuhlmann (2018)'s *Comparative Health Policy*, The Commonwealth Fund (2017; 2020)'s publications of international health care system profiles, the WHO's *Health Systems in Transition* publications, and information published from national and state departments focusing on health (ministries of health, national care institutions, Department of Health and Human Services, Centers for Disease Control and Prevention, etc.). Through these sources I searched for general information on system functioning, legislation, financing, governance, and the relation to service provision. This was primarily a collection and summary of completely public information. This method of course depends on the reliability of the aforementioned institutions' complicity in publishing accurate information. This author believes that the first three resources have no dishonest incentive to publish misinformation, and even information published from national and state offices should be accurate and reliable. In order to perform a properly systematic review of inequalities in the individual

systems, my point of first contact was Google Scholar, where I used an identical syntax of search terms for each system to find published, scholarly works on pregnancy outcomes. The search included ‘health inequality’ and three commonly interchangeable terms for prenatal care (‘prenatal,’ ‘antenatal,’ and ‘maternity’), plus the appropriate country/state name (Norway, the Netherlands, United States, Michigan). As trends in health inequalities may change over time and newer information should be more reflective of the current state of inequalities, I predominantly selected articles for review that were published after the year 2000. Exceptions were made for relevant articles showing consistent citations in other work, and of those only articles published after 1990 were reviewed. An assumption of reliability was made, as the only articles included in the analysis were those published in peer-reviewed, academic publications and journals.

Comparative and normative methods are used in this paper in order to explore and analyze distinct problematic characteristics in different health care systems’ approach to prenatal care. With the World Health Organization (2020) in mind, the similarities and differences between how Norway, the Netherlands, and the United States and Michigan view health inequalities are examined through the lens of a human right to health. To establish these similarities and differences in one place serves to create a platform where variations in health care and public policy may be considered. This information may aid in understanding both why a state acts the way it does and the perceived benefits and downfalls of doing so. It expands one’s understanding of policy options and makes known different ways of applying solutions (Blank et. al, 2018). Because each of the observed countries has such stark variations in the governance and financing of health, let alone the way they approach provision of insurance and care, it seemed relevant to use them in a comparative analysis. All three are very high-income countries with high levels of development according to international measures, and in their own ways they are unique in their vision and realization of human rights and how their health systems should be formulated. Each country exhibited its own set of inequalities, but explaining the nuances of these inequalities may again serve to broaden understanding of the range of policy measures at policymakers’ disposal. Due to the nature of the research and the fact that the findings in this paper are a collection of study outcomes, direct causality cannot necessarily be drawn between how a system functions and their specific set of health inequalities. Therefore, any ranking of the systems will purely be based on how frequent inequalities in health are found to be. The reviewed articles do not explicitly state that blame can be placed in overall health system structuring for their studied

health indicators. But, implications can be drawn about how system structuring *may* result in inequalities, and these implications will largely be substantiated in this paper's discussion.

Chapter 4: Findings

This section will provide an overview of the existing health care and insurance systems in Norway, the Netherlands, and the United States and Michigan. This includes Norway's largely public system of insurance and provision, the Netherlands' hybrid of private and public insurance and provision, and the United States'/Michigan's primarily private system. Legislation and governance, provision of care, financing of the system, and health service offers will all be explained, along with specific details on the rights that women have to prenatal care, and how well their structures align with the World Health Organization's human right to health. Each state faces its own set of challenges, and inequalities borne of these challenges will be introduced. As stated above, pregnancy outcomes act as indicators of the development and progressiveness of a country. If pregnant girls and women do not experience the same system equally, or different groups of demographics experience variations in health outcomes, there is room for both criticism and improvement in these HICs.

Of all states in the US, Michigan was chosen because it has a population (9.9 million) that lies between the populations of Norway (5.3 million), and the Netherlands (17.3 million). Michigan also has a relatively similar population structure to that of Norway's, with six urban centers of over 100,000 people and the remainder of the state being largely rural. Although the United States'/Michigan's model of insurance is markedly private, both the private and public systems are worth discussing due to their wide utilization, especially in prenatal care provision. In fact, approximately 46% of births in Michigan in 2018 were financed through public insurance (Kaiser Family Foundation, 2019). For these reasons, pregnant women's use of public insurance in Michigan will be included in the comparative analysis along with use of the private system. In this way, the offers for prenatal care and what inequalities exist will be compared.

A distinguishing aspect of these countries' health insurance systems is their relationship to negative and positive rights. Negative rights are described by Blank et. al (2018) as implying that governments must avoid interference with the rights bearer (the individual), and that the rights bearer has the "freedom to be left alone to use one's resources as one sees fit"; to have the "freedom from intrusion," (p. 4). What this further implies is that there is no obligation on the part of the government or other individuals to take actions that would provide an individual with necessary resources to utilize their rights (read: policies that promote the reallocation of resources). Positive rights, on the other hand, are the rights which

“impose obligations on others such as tax payers to provide those goods and services necessary for each person to exercise his or her rights,” and the ability to realize such rights “requires the presence of institutions that guarantee a certain level of material well-being, through governmental redistribution of resources where necessary,” (Blank et al., 2018, p. 4). Positive rights also require that a population lives free from deprivation and is entitled to “at least a decent level of human existence,” (Blank et al., 2018, p. 4). The definition of positive rights more closely aligns with the established definitions of “health” and “right to health” and therefore a country’s health insurance system will be regarded as more human rights-based according to how closely it aligns with the definition of positive rights.

4.1 Norway

Universal Coverage

The first system type is the National Health Service (NHS) model in place in Norway. The primary distinguishing factor of this model of health insurance is its universal coverage funded by general taxation, grants from the central government, and user payments. Health care regulation, provision/delivery, and financing are all under the ownership or control of the state and covers 99.4% of the population (Blank et al., 2018; Commonwealth Fund, 2017). It is not possible to opt out of health insurance in Norway and all residents are members of the system. Approximately 10% of the population has supplementary private/voluntary health insurance that allows them quicker access to elective services (Sperre Saunes, Karanikolos, & Sagan, 2020). Voluntary health insurance (VHI) is typically purchased and provided by employers.

Governance and levels of provision

A unique component of the Norwegian model as compared to other NHS models is that Norway’s health care system is semi-decentralized with three primary levels of governance: national, Regional Health Authorities (RHAs), and municipalities. Under this system, the national government is a decision-maker over state-wide prioritization, policymaking, legislation, and national budgeting, which the parliament then reviews and accepts. The state’s Ministry of Health and Care Services (hereafter Ministry of Health) owns and oversees the four RHAs, which subsequently own hospital trusts, making the RHAs directly in charge of specialist care. Specialist care in Norway encompasses somatic care, mental health services, ambulatory, and care for those dealing with addictions to drugs or

alcohol. The Ministry of Health regulates, budgets for, and supervises its supporting agencies; safeguarding that health care and social service provision follows national legislation (Sperre Saunes et. al, 2020). Municipalities are responsible for the primary care sector (general practitioners), both in provision and financing, and have significant freedom in its organization. Prenatal care services fall under primary care and are offered and financed through the municipalities. Women with uncomplicated pregnancies visit either their general practitioner (GP) or (more likely) a registered midwife throughout the course of their pregnancy.

Legislation and right to health

In Norwegian health care legislation, it is established that “Everyone has the right to the same level of health services regardless of diagnosis, place of residence, personal financial situation, gender, ethnic background and individual life situation,” (National Health and Care Services Plan, 2011, p. 2), and this is realized through the system’s universality. The public health insurance offer covers essential medical services including “acute primary, hospital, and ambulatory care, rehabilitation, and outpatient prescription drugs” on a specified “blue list” (Commonwealth Fund, 2017). The way the system works in practice is through a “gatekeeper model” in which an individual must visit their GP as a first point of contact, and if their health concern is beyond the scope of services offered by their GP, will be referred to secondary or specialist care. Everyone residing in Norway is assigned a GP and has the right to change up to two times per calendar year.

Cost of services

In 2020, the co-pay (“egenandel” in Norwegian) for adults is NOK 155,- (USD \$15) for general consultations with a GP and NOK 351,- (USD \$34) for specialist visits. Individuals under age sixteen are covered under government grants and are not subject to co-pays. In 2020, the yearly deductible for an average adult for basic services was NOK 2460,- (USD \$238) (helsenorge.no, n.d.). Individuals pay co-pays at the point of service that build up to their yearly deductible. Once the deductible is met, the individual receives an exemption card (“frikort”) that they show in subsequent consultations, exempting them from cost-sharing for the remainder of the calendar year (helsenorge.no, n.d.). There are no direct monthly or yearly insurance premiums for users of the National Health Service because as stated, the system is funded in part through general taxation and individuals’ tax contributions are assumed to cover those costs.

Prenatal care coverage

Included in the list of services offered under the NHS is prenatal care, which applies to “all pregnant women in Norway” and under low-risk pregnancies entitles them to eight consultations with either a midwife or their general practitioner (helsenorge.no, n.d.). The consultations include one ultrasound and health and family planning services, and women who work have the right to paid time off for visits (Sperre Saunes et. al, 2020). Services included in the Norwegian health care system as they align with the previously established list of services recommended by the WHO are found in **Table 1**. Recommended consultations with one’s GP or midwife are included in their health insurance and women access these services with no obligation for cost-sharing/co-pays. This also applies to women that are not citizens. Given that prenatal services are available with no out-of-pocket cost to every pregnant woman in Norway, the focus of their legislation on a right to health is evident.

Positive and negative rights in Norway

On principle, Norway’s approach to health care provision – and especially prenatal care – adheres to the ideals of positive rights, as the government takes on the responsibility of redistributing resources in a way that satisfies the health needs of every individual and gives them equal accessibility to the system. By not requiring out-of-pocket costs and allowing paid time off for prenatal visits, Norway creates an atmosphere around prenatal health that allows for access regardless of income, age, or any other socioeconomic factor. Funding for health care comes from a governmental redistribution of the taxes paid by individuals so everyone can access health services, guaranteeing “a certain level of material well-being” as Blank et. al (2018, p. 4) puts it. This adherence to positive rights satisfies the WHO’s human right to health framework and creates a society able to promote equality of access to necessary services and subsequently, more equity in health. Whether or not this functions in practice as such will be discussed later.

4.2 The Netherlands

Universal coverage

The Dutch system of health insurance and care provision generally follows a Social Insurance model, although it does have distinguishing differences that set it apart as a hybrid of NHS and private models. For example, the role of GPs as gatekeepers and community-based, independent midwives are specific to the Dutch system as compared to “typical”

Social Insurance. Health insurance under this model is, similar to the NHS, based upon universality of coverage. In the Netherlands, purchasing a “basic insurance package” is compulsory and done by individuals via monthly or yearly premium payments into private, largely not-for-profit insurance funds that are regulated by the state (Blank et. al, 2018; Kroneman et. al, 2016). It is considered an entitlement of inhabitants to have access to the basic insurance package. It is also possible to purchase supplementary/voluntary health insurance for coverage of services such as dental care, alternative medicine, eyeglasses, contraceptives, and more, but this supplementation does not guarantee faster access to care (as it does in Norway, for example). Approximately 84% of the Dutch population buys voluntary health insurance. In addition to the monthly or yearly premium, individuals have a yearly deductible and pay the full cost of services until it is met (although some basic services such as GP visits, maternity and midwifery care, and treatment for some chronic illnesses are reimbursed). In 2014, less than 0.2% of the population (about 30,000 people) were without insurance (Commonwealth Fund, 2017), an impressive statistic considering one of the main focuses of the Dutch government for the health care system is “access to care for all” and “solidarity through medical insurance,” (Healthcare for Internationals, n.d.).

Regulation and governance

The perceived benefit of insurance companies functioning privately is managed competition, believed to reduce cost for consumers. Individuals living in the Netherlands have the option to change their insurer every year. The majority of the Dutch population (90%) is insured by one of the four largest insurance “conglomerates” (Commonwealth Fund, 2017). Insurers are able to negotiate with providers of health care on price, quality measures, and how much is offered to individuals under supplemental insurance packages (Kroneman et. al, 2016). Part of the regulation responsibility of the state is creating the guidelines for what must be included in the basic insurance package, how much the basic package costs, and supervising that the markets are functioning properly. Additionally, the state is responsible for development of health policy and implementation of that policy (including budgeting, for example). These responsibilities lie primarily with the Ministry of Health, Welfare and Sport (hereafter Ministry of Health; country titles will be included if necessary to avoid confusion). Further, as it pertains to the basic insurance package, the state has an instituted ban on premium differentiation and has made it obligatory for insurers to accept applicants. Voluntary insurance premiums are not regulated in the same way and under these packages, applicants may be screened for risk factors (Kroneman et. al, 2016;

Commonwealth Fund, 2017). There is also a current ban on distributing profits from insurance companies to shareholders of those companies to keep with the tradition of not-for-profit insurance.

The Ministry of Finance is in charge of how much employers must contribute to the insurance fund on behalf of employees as well as paying the “healthcare allowance” (tax subsidy) to low-income individuals who bear a financial burden as a result of the mandatory insurance package (Kroneman et. al, 2017). In other words, those who have an income low enough that they are significantly affected financially by purchasing mandatory insurance are met with subsidized care costs. Akin to the Social Insurance tradition, the state is responsible for regulation of health care provision even though the provision itself is largely private and not-for-profit. Care provision is accessed through one’s individual insurance provider network, which sometimes translates to patients’ restriction of choice of provider. Although, some insurance packages may offer consumers freedom of choice in return for higher premiums. In this way, the most effective method of competition among providers for patients is by offering high quality care (Kroneman et. al, 2016). The government prides itself on its wide availability of information on waiting times, cost, and patient satisfaction, available to consumers online.

“Basic” insurance package, costs of care

Primary care in the Netherlands includes curative and preventive services spanning a wide range under the responsibility of the GP. Specialists provide inpatient and outpatient care at both general and university hospitals (Kroneman et. al, 2016). The basic insurance package covers GP and prenatal care, hospital and specialist care, the first three attempts of in vitro fertilization, dental services until age 18, prescriptions, and basic or specialist mental health care, among other services. Patients pay full cost for services up to their yearly deductible, but are reimbursed for services provided directly by the GP (and those do not eventually contribute to the yearly deductible). There are some services for which an out-of-pocket “personal contribution” is required in addition to the payments toward one’s deductible. Individuals up to eighteen years old do not pay for services or premiums, as they are covered by government grants (Commonwealth Fund, 2017; Zorginstituut Nederland, n.d.-a). The annual deductible for the standard insurance package in 2020 is EUR €385 (USD \$419) (Zorginstituut Nederland, n.d.-a; Zorgverzekeringslijn.nl, n.d.). As stated above, in addition to the deductible, users of health insurance also pay a yearly or monthly premium, which on average totaled EUR €1300 (USD \$1416) per year in 2018 (Ministry of Health,

Welfare and Sport, 2018). This yearly premium is not risk adjusted; it is the same for all people covered by the same insurance company, without regard for age or risk level. There is also an income-dependent contribution (similar to the yearly premium) made by one's employer that contributes to the Health Insurance Fund. The health insurance allowance for low-income individuals covers some proportion of their premium based on income, in an attempt to protect these groups against "catastrophic spending" (Kroneman et. al, 2016). This applies to singles earning less than EUR €27,012 (USD \$29,435) and households earning less than EUR €33,765 (USD \$36,793) per year. There are about 4.4 million inhabitants – just under one quarter of the population – that adhere to this sliding scale (Commonwealth Fund, 2017). The subsidies can be rather significant, especially for the lowest income groups. Undocumented immigrants are not able to buy into the insurance market and must pay the full cost for services themselves, although there remain systems in place to reimburse unmanageable costs. The exception, or services that undocumented immigrants have available to them and are not required to pay for, are: acute services, long-term care, and prenatal care (Commonwealth Fund, 2017).

Prenatal care coverage

Prenatal/obstetric care is covered by basic insurance, and pregnant women are reimbursed for many of the services. A midwife or one's GP provides care to women with low-risk pregnancies; obstetricians and clinical midwives become involved in hospital settings where the pregnancy is deemed high-risk. Midwives practice independently, and 96% of women receive at least some care from a primary midwife during pregnancy, labor, or postpartum (Zondag et. al, 2017). There are some services for which a medical referral is needed in order to have the cost reimbursed; pregnant women without a referral are able to access these services at full out-of-pocket cost. The services covered by the basic package are: ultrasound to determine gestational age, counseling by an obstetrician on prenatal screening, a structural ultrasound to determine abnormalities, blood serum test, non-invasive prenatal test (NIPT), and choice of home or hospital birth (Zorginstituut Nederland, n.d.-c). How these services compare to the World Health Organization's list of recommendations is found in **Table 1**. If a woman chooses to have a home birth, her insurance will cover the cost of necessary materials in a "maternity box" including bed protectors, sterilizing alcohol, and other materials (Zondag et. al, 2017). Her primary midwife and a maternity assistant will attend to the woman throughout the home birth. If a woman deemed low-risk chooses outpatient hospital birth, she must initially pay EUR €300-400 (USD \$329-438), although

some insurance companies will reimburse this cost (Zondag et. al, 2017). Women determined to be higher risk must give birth in hospitals, and in this case there is no additional cost. The basic insurance package covers the use of a maternity assistant at one's home for the first eight to ten days of the postnatal period (total of 24 hours minimum, 49 hours maximum). According to the Royal Dutch Association of Midwives (Zondag et. al, 2017), "the maternity assistance performs medical checks, supports breast feeding, gives information, takes care of light household chores, prepares meals and takes care of other children if necessary." For these services, individuals pay EUR €4.10 (USD \$4.50) per hour (Zondag et. al, 2017; Zorginstituut Nederland, n.d.-b).

Positive and negative rights in the Netherlands

A primary goal of the Netherlands in creating a compulsory health insurance system is to attempt to cover the entire population and give access to basic health care services. Through redistribution of patient contributions and generous reimbursements for lower-income individuals, necessary services appear to be largely accessible to all, at least as it pertains to ability to pay. Therefore, the Dutch system of health insurance and care aligns with the ideals of positive rights and a right to health, as it assumes that solidarity can be created through access to care and that certain services are necessary in order for everyone to enjoy a certain level of well-being.

4.3 United States

Private and public insurance models – nationwide

The United States' system of health insurance and care provision is decidedly private, as the government plays little to no role in provision of services and purely acts as a (relatively distant) regulator. Health insurance under this system is therefore predominantly purchased through and provided by private insurance companies, although public offers are available through such government institutions as: Medicare (for those over age 65), Medicaid (for low-income adults), and the Children's Health Insurance Program (CHIP) for low-income individuals under 18. In 2017, public spending constituted 45% of total health care expenditure and private spending accounted for 34% (Tikkanen, Osborn, Mossialos, Djordjevic, & Wharton, 2020). The three public insurers (Medicare, Medicaid, and CHIP) are regulated and administered through the Centers for Medicare and Medicaid Services (CMS) at both the federal and state levels; private insurance in the US is primarily regulated at the

state level. At the federal level, the Department of Health and Human Services (DHHS) functions as the key administrative body in the US insurance/health care system, and carries the responsibility of fulfilling directives of Congress and the (presidential) administration (Rice, Rosenau, Unruh, & Barnes, 2013). Relevant duties include, but are not limited to: finances, administrative duties, and regulation of the system, planning and coordination, and provision of health care services for the publicly insured. DHHS includes myriad departments, but most notable in this context are CMS (Medicaid) and CHIP. In addition, federal and state organizations act as purchasers of health care services within the public system, with Medicare as the greatest purchaser of public services (Rice et. al, 2013). The federal government is also responsible for funding community health centers, which are “a major source of primary care for underserved and uninsured populations,” (Commonwealth Fund, 2017, p. 174).

Health insurance reform – Affordable Care Act

The Patient Protection and Affordable Care Act (ACA, also known as Obamacare), enacted nationwide, has played a significant role in the availability and provision of health insurance since its adoption in 2010, and was implemented with the primary goal of increasing and improving coverage and leaving as few people uninsured as possible. Interestingly, there are noticeable ways in which the ACA mirrors the Netherlands’ system. One of the ACA’s most significant (and controversial) pillars was its requirement that nearly all individuals obtain some type of insurance. Upon its adoption, those who did not buy into a health insurance plan were required to pay a yearly fee for not enrolling, with the exception of individuals with such low income that they would use more than 8% of their income on insurance premiums. As of 2019, the fee for being uninsured is no longer applicable, and anyone can choose to buy or not buy insurance as they wish (healthcare.gov, n.d.-a). Anyone can purchase insurance from the company they choose, and changing insurers depends on the individual contract. Another component of the ACA aimed at increasing coverage is the implementation of subsidies on both premiums and out-of-pocket cost-sharing/co-pay mechanisms for the uninsured, lower-income population that does not qualify for Medicaid. The sliding scale premium subsidy is available for those earning 100-400% of the federal poverty level, and cost-sharing subsidies are only for individuals earning between 100 and 250% of the poverty level (Commonwealth Fund, 2017). Subsidies are only available to individuals who have purchased insurance through the ACA health insurance marketplace, an online platform where insurance “exchanges” are made publicly available for individuals to

compare plans and eventually purchase packages that best fit their needs. The marketplace is where one can compare what premium subsidies and reduced cost-sharing models best fit their budget and needs. Those with incomes up to 138% of the federal poverty level can access insurance through an expansion of Medicaid coverage in some states (including Michigan on April 1st, 2014) (Kaiser Family Foundation, 2020-c).

In 2020 the federal poverty level for an individual is USD \$12,760 and USD \$26,200 for a family of four (*HHS Poverty Guidelines for 2020*, 2020). Individuals with incomes up to USD \$17,608 and families of four earning USD \$36,156 are therefore eligible for the Medicaid expansion if their state has adopted it. This original part of legislation has been changed under the current administration, with more focus now being emphasized on work requirements for individuals accessing health insurance through Medicaid (Hinton, Musumeci, Rudowitz, Antonisse, & Hall, 2019). Although states may continue to uphold the expansion (as Michigan has), it is no longer considered a “policy priority” and is consequently up to individual states if they will maintain it. In March 2020, Michigan ruled the work requirement for coverage unlawful (Michigan Department of Health and Human Services, 2020). As a result, Michigan inhabitants earning up to USD \$17,608 per year still have the right to health insurance through Medicaid regardless of their employment status. Both health insurance and provision of care in the US is available through institutions that are for- and not-for-profit. This is largely due to the private nature of the system itself, and the dialogue existing around for-profit institutions has been largely positive, although it is shifting. As is more closely aligned with not-for-profit models seen in the Netherlands, the ACA requires that “insurers return 80%...of premiums in the form of health benefits,” (Rice et. al, 2013, p. 31).

Benefits and regulations of the ACA

The Affordable Care Act includes the regulation that insurers offer essential health services as part of all available plans, and that they accept all applicants (virtually no possibility for risk selection, as higher premiums are only adjusted based on broad age categories and smoking status). This is mandatory for all insurance packages. The required services cover “10 essential health categories” including hospitalization, maternity and newborn care, pediatric services, mental health services, prescription drugs, ambulatory patient services, emergency care, preventive and wellness services, chronic illness treatment, and more (Commonwealth Fund, 2017). What and how much is specifically covered in each of the ten categories is determined by individual states. One exception, or one area of

coverage that is regulated nationally, is preventive care services for women in an effort to reduce health disparities by gender. Due to the ACA, all new insurance plans (“new” meaning joined after 2010) are required to provide the following for women: anemia screening; breastfeeding support and counseling; contraception; folic acid supplements; screening tests for diabetes, STIs, infections, and pre-eclampsia; at least one visit with a healthcare professional per month for the duration of a pregnancy; counseling on tobacco and alcohol use; and other non-pregnancy related services (healthcare.gov-b). These services must be offered regardless of how the insurance was acquired (through one’s employer, individually, through the ACA marketplace, etc.), and they do not require co-payments or out-of-pocket contributions toward one’s yearly deductible. Although, the costs of performing the services may be subject to cost-sharing, which is dependent on the individual plan (healthcare.gov-b). What this means is that one will not be charged a co-pay for the cost of a blood test or screening, but may be subject to pay for the other services required to facilitate the test (time spent with GP, pathology costs, etc.). Few details were available on this topic. Prior to 2014 and the implementation of the ACA, preventive service offers were not requirements and it was common that privately-insured pregnant women must purchase supplementary (VHI) benefits to their existing plan in order to have comprehensive prenatal care coverage.

Who is insured and uninsured

In 2018, 12% of US adults age 19-64 and 5% of children age 0-18 were uninsured, with 91.5% of the total population estimated to have coverage (Tikkanen et. al, 2020). Publicly insured individuals accounted for about 34% of the insured population in the US, with Medicaid making up just over half at 17.9%. Roughly 67% of the insured were covered privately (with 55% of them receiving coverage through their employer); 15% of the insured had multiple sources of coverage (Tikkanen et. al, 2020). It is worth noting that there exists a federal mandate stating that businesses with fifty-one or more employees must offer insurance plans to their employees. No requirement exists for small businesses with fewer than fifty employees. It is not possible for undocumented immigrants to purchase insurance in the US, the singular exception being pregnant women that would ordinarily qualify for Medicaid. Under this exception the woman is technically covered under an extension of CHIP as a protectionary measure for the unborn child.

Benefits under Medicaid

The range of care services covered under Medicaid is established at the federal level and state compliance is compulsory, although states can add benefits if they wish. For example, 39 of 50 states (including Michigan) in 2018 also offered basic dental services with little to no cost sharing. Offers include but are not limited to: “inpatient and outpatient hospital services...family planning, nurse midwives, freestanding birth centers, and transportation to medical appointments,” as well as prescription drugs (Tikkanen et. al, 2020). In general, private insurers reimburse providers of health care at higher rates than public insurers (read: Medicaid) do, which may lead providers to prioritize care for some patients over others. This also results in varying payment and revenue rates for providers. Funding for Medicaid comes largely through taxation, with federal taxes accounting for almost two-thirds (63%) of the cost (Tikkanen et. al, 2020), while funding for private insurance is derived from patient and/or employer contributions in the form of premiums, co-payments, and coinsurance.

4.4 Michigan

Insurance coverage and benefits

In Michigan, 8% of adults and about 3% of children were without insurance coverage in 2018 (Commonwealth Fund, 2020). In the same year, Medicaid covered 19% of adults 19-64 and private insurance covered 70% of adults (63% of the 70% received insurance from their employer). Children age 0-18 were covered privately at 58% of the population, and 38% were covered by CHIP services – children are eligible for publicly-provided CHIP services when they live in a household with an income up to 217% of the poverty level (Kaiser Family Foundation, 2020a,b). It is hypothesized that one of the primary reasons for income ceilings on Medicaid and CHIP coverage is that individuals earning more than a certain percentage of the federal poverty level are either assumed to have the income to afford insurance coverage privately or are receiving it from their employer. Prior to the ACA this resulted in significant gaps in coverage for large groups of the population. Young people are eligible for private coverage under their caregiver’s (private) plan until the age of 26, even if their caregiver is insured through an employer.

Private insurance in Michigan is available through a number of insurance companies and accessed directly by the individual, via one’s employer, or through the ACA’s health insurance marketplace. As is the case for the whole of the United States, private plans offered

by employers in Michigan must meet specific minimum requirements for what is covered, although the plans may vary when it comes to additional benefits. Some of the minimum required benefits in Michigan are: screening for various cancers (breast, colon); emergency services; obstetric, gynecological, and midwife services; pediatrician services; prescriptions; and the ten essential health benefits previously listed (State of Michigan Dept. of Insurance and Financial Services, 2017). The services that patients must make co-payments for vary on the individual plan, and just because a service is “covered” does not absolve an individual from cost-sharing. It is common that among insurance plans with lower monthly premiums and higher deductibles, higher cost-sharing is required for GP visits, hospital services, prescriptions, and most other health care services. Typically under plans with higher premiums, there are lower subsequent deductibles, and these plans require less frequent and/or more affordable cost-sharing. Under private insurance purchased through the ACA, cost-sharing for low-income individuals – those with incomes too high to qualify for Medicaid – means that anywhere from 56% to 90% of health care costs (premiums and co-payments) are paid for by insurers (State of Michigan Department of Insurance and Financial Services, 2017).

Costs of insurance

Yearly deductibles for private insurance plans vary greatly, but according to the Commonwealth Fund (2017) most plans cap deductibles at USD \$7150 per year for individuals and USD \$14,300 for families. Although, the *average* deductible in 2018 for an individual in Michigan was USD \$1846 (Tikkanen et. al, 2020). As it is regulated at the federal level, preventive services are included in private insurance packages in Michigan without co-pays to the individual as long as the care is provided in-network. As stated before, whether or not an individual will pay co-pays for the other services *around* preventive care is both unclear and ultimately up to the insurance plan.

Private prenatal care

When the ACA was implemented, legislation required that new private insurance plans in Michigan must offer coverage of prenatal care services that align with the ACA requirements. These services must be offered without co-pays, regardless of income. (**Table 1**, columns titled “Covered in Michigan: private insurance through the ACA marketplace for lower-income individuals that do not qualify for Medicaid” and “Covered in Michigan: private insurance for individuals that do not qualify for subsidies”.) It is necessary to point

out that in these columns, “covered” simply means the service must be offered but does not necessarily imply that it is without cost. As referenced to above, conflicting information can be found regarding whether or not preventive and/or prenatal care is subject to cost-sharing. According to DeMichele, Bastian, Georgen, deSolla Price, & Mullen (2019), the ACA “includes preventive care at no out-of-pocket cost on most health plans... This includes coverage for vaccines and new preventive services for women.” Healthcare.gov-b provides a detailed list of what prenatal services are covered “without charging a copayment or coinsurance.” These are the services included in **Table 1**. But, DeMichele et. al (2019) also mentions “For most preventive services, only the screening or the vaccination itself is covered at no charge. The actual services required to facilitate the preventive care can be subject to cost sharing.” With this information, it is necessary to include an asterisk in the table signifying that there may be associated costs for some listed services. There are many private insurance companies with myriad plans, and although those plans are required by federal law to provide prenatal care services free-of-charge as well, it is unclear whether providers will charge co-pays for other, individual services required to carry out the specific service (for lab testing, “extra” ultrasounds, etc.). Due to the fact that there are so many possible combinations of plans, some of which are subject to subsidies, the range of potential co-pays is vast and not possible to report.

Prenatal care under Medicaid

Michigan’s Medicaid services cover an extensive list of benefits including: GP visits, emergency services, family planning, mental health services, pregnancy care (prenatal, delivery, and post-partum), immunizations, optometry, dental services, and much more. Health care services are paid for on a fee-for-service basis, with the payment coming directly from Medicaid through the federal government. There are co-pays required for some services, but from the information available, it appears that the maximum out-of-pocket cost for any single service is USD \$3 (or \$50 for inpatient hospital stays), and pregnancy-related services are absolutely not subject to cost-sharing under Medicaid (Michigan Department of Health and Human Services, 2020). Because both Medicaid and private insurance are legislated so that pregnant women have the right to a multitude of offered services, the WHO’s recommendations for a positive pregnancy experience are satisfied. The prenatal care services covered by Medicaid are the same as those listed above and are referenced in **Table 1**.

Positive and negative rights in the US system

As it pertains to positive and negative rights, the formulation of the US health care and insurance system is essentially divided into two parts corresponding to whether insurance is private or public. The private insurance available to those not qualifying for subsidies aligns more closely with the definition of negative rights. This author assumes that the ACA's initial requirement that all must be insured or pay a fine was enacted to prevent what is termed a "death spiral" in which individuals that are low-risk, don't gain utility from having insurance, and/or find the cost of premiums too high leave the market. By leaving the market, premiums for those still insured must rise in order to make up for funds lost when the low-risk group left, as the insurance company is no longer making enough of a profit to cover the needs of those still insured. In theory, this would cause more people to leave the market because they too are of low enough risk and/or do not earn enough to justify paying the newly higher premiums. The ACA's insurance requirement was aimed at providing insurance coverage to more people (which it accomplished) at a lower cost to them, whether it be through subsidies or more reasonable premiums. With the repeal of the compulsory insurance requirement under the current administration, the system is approached in a way that allows individuals to use their own resources as they wish without considering the needs of anyone else. They have the "freedom from intrusion" by the government or other individuals as explained by Blank et. al (2018, p. 4) and neither the government nor other tax-paying individuals are obligated to assist in providing the resources necessary that allow them the capability to utilize their rights – in this case, the right to health. So, the initial legislation of the ACA was aimed at a more positive rights approach as it would have guaranteed a more equal level of well-being. Unfortunately with the current changes, private insurance in the United States and Michigan can largely be considered a case of negative rights.

On the other hand, public insurance (specifically Medicaid) is a case of positive rights. This department receives resources from the federal government via redistributed taxes in order to allow low-income individuals what Blank et. al (2018, p. 4) calls an "entitlement to at least a decent level of human existence," at least as it pertains to health care accessibility. Medicaid is absolutely an example of a positive right because it exists purely to extend the right to health to those who otherwise would not have the resources necessary to enjoy that right. It attempts to create a more equitable landscape in which all have access to basic health care services, even with a very low income. In the US system, inhabitants have the right to health *insurance* because they can purchase it if they wish, but those that could not afford it prior to the ACA subsidies did not actually have the opportunity to enjoy this

“right to purchase” and subsequently their right to *health* either. Therefore, the United States health care/insurance model has varying aspects that satisfy both positive and negative rights.

4.5 Summary of systems

First and foremost, perhaps the most distinguishing difference between the health care systems in Norway and the Netherlands versus the system in the US is that the European states base their systems on principles on universality and consequently the universal access to health care. This is because the European states are both “welfare states” while the US is a “non-welfare state.” A welfare state, as defined by Merriam-Webster (n.d.), is “a social system based on the assumption by a political state of primary responsibility for the individual and social welfare of its citizens.” This is clear in Norway and the Netherlands’ configurations of health care, as the states take primary responsibility for assuring that all individuals have insurance coverage. Conversely, the United States, a non-welfare state, absolves itself of the responsibility that every individual is covered, with the only exceptions being the elderly and low-income. Due to its structure, the US health care system allows for the risk that certain groups of the population will not have health insurance – those that do not have private nor qualify for public arrangements. Where the European states provide the “right to health,” this author posits that the US promotes more of a “right to [purchase] insurance.”

Health care and provision in Norway is rather simple and straightforward, with either the federal, regional, or municipal government in charge of regulation, financing, and provision of health care and prenatal services. Due to the fact that individuals are not subject to cost-sharing for prenatal care because of governmental redistribution of resources (this redistribution assuring equal coverage and accessibility for all), Norway’s health care system satisfies the definitions of positive rights and the human right to health. Specifically, prenatal services also satisfy the recommendations of the World Health Organization and promote positive rights.

The Netherlands’ health care system is arguably more complex than the system in place in Norway, but the goal of providing equal access to health care is the same. The Dutch mixed private and public provision, with its requirement that inhabitants purchase insurance, at first seems discriminating against those low-income individuals who do not have the means to afford insurance coverage. But because of the subsidization of some aspects of the insurance system for low-income populations, as well as the fact that none of the WHO’s

recommended prenatal services offered by the Dutch system require co-payments, the prenatal service offer in the Netherlands is a case of positive rights with a human right to health in mind. One small downfall is that clear information regarding the offer of pre-eclampsia screenings and tetanus vaccinations was unavailable, although it is very possible that this was simply due to a language barrier in accessing information.

The health care and insurance system in Michigan is perplexing due to its fragmentation between state and federal levels and its use of both public and private provision of services. There are many sources of information and these sources are unfortunately conflicting at times. But according to the research, prenatal care offers align with the recommendations of the WHO under all three categories of insured status (covered by Medicaid, covered by private insurance and receiving subsidies, and covered by private insurance and *not* receiving subsidies). Whether or not these services are subject to cost-sharing under private insurance unfortunately remains unclear, but it can at least be speculated that patients are required to pay more out-of-pocket for services when they are not covered by subsidized insurance. Therefore, Medicaid is the least expensive form of health insurance coverage for prenatal care (appropriately so, as the service is reserved for very low-income individuals), followed by subsidized private, and unsubsidized private insurance. The system follows a mix of positive and negative rights with, if anything, more weight in negative, as the private portion of insurance utilized by the majority is based on the freedom to choose to be insured – or not – without regard for anyone else in the society. Additionally, because public insurance through Medicaid is only available to those that are very low income, its existence is stigmatized and likely something most people would logically prefer to remove themselves from, as removing oneself would mean an income greater than just barely living above poverty.

Table 1. Prenatal care service offers in the individual systems as they correspond with the WHO recommendations for a positive pregnancy experience.

Prenatal service recommendations	Covered in Norway ^a	Covered in the Netherlands ^b	Covered in Michigan: private insurance through the ACA marketplace for lower-income individuals that do not qualify for Medicaid ^c	Covered in Michigan: Medicaid ^d	Covered in Michigan: private insurance for individuals that do not qualify for subsidies ^e
Counseling on healthy diet and physical activity	X	X	X*	X	X*
Daily iron and folic acid supplements	(suggested but not offered)	(suggested but not offered)	folic acid: X*	folic acid: X	folic acid: X*
Prenatal screening for pre-eclampsia	X	N/A	X*	X	X*
Hyperglycemia screening as test for gestational diabetes	X	X	X*	X	X*
Guidance on tobacco use	X	X	X*	X	X*
Guidance on alcohol and substance use	X	X	X*	X	X*
HIV and syphilis testing	X	X	X*	X	X*
Ultrasound scan	X	X	X*	X	X*
Tetanus vaccination (subject to prior vaccination)	X	N/A	X*	X	X*
Interventions for common physiological symptoms	(suggested but not offered)	X*	(suggested but not offered)	(suggested but not offered)	(suggested but not offered)
Availability of midwife-led continuity of care	X	X	X*	X	X*
Minimum of eight contacts	X	X (average of 10-12)	X* (average one/month for first 28 weeks; two/month for weeks 28-36; weekly from week 36-birth)	X (average one/month for first 28 weeks; two/month for weeks 28-36; weekly from week 36-birth)	X* (average one/month for first 28 weeks; two/month for weeks 28-36; weekly from week 36-birth)

a) found in Sitras & Nordeng (2020); helsedirektoratet.no

b) found at Zorginstituut Nederland, n.d.-a; NVOG, KNOV, NHG, Erfocentrum, CPZ, RIVM, & K&Z, 2019

c) found at healthcare.gov(b); DeMichele et. al (2019)

d) found at MDHHS (2020); Gifford, Walls, Ranji, Salganicoff, & Gomez (2017)

e) found at: healthcare.gov(b); DeMichele et. al (2019)

*may be subject to cost-sharing

Table 1 makes it apparently clear that all studied prenatal care offers align almost completely with the WHO recommendations for positive pregnancy. The exceptions primarily being interventions and provision of supplements that are typically readily available over-the-counter for moderate out-of-pocket cost. It is necessary to state that pre-eclampsia screenings and tetanus vaccinations may be available through basic insurance in the Netherlands, but I was unable to find information on these procedures, which may simply be due to a language barrier. Again it was unclear whether services through private insurance in Michigan would be subject to out-of-pocket cost-sharing, but it was at least apparent that service offers are comprehensive.

4.6 Presentation of Inequalities

Norway

Primary variables of inequality: education, income, immigration status, Indigenous status

In Norway, the registered female population was 2.6 million in 2019 (Statistisk Sentralbyrå, n.d.). The most significant variables that appear to contribute to inequalities in maternal health and/or prenatal outcomes are education level, income, migrant status, and whether or not an individual is of the Indigenous Sami or Kven populations. The greatest proportion of research into adverse prenatal outcomes has been done on correlations with an individuals' level of education. Many studies use education level to compare outcomes as it is: 1) often a proxy for other socioeconomic factors such as employment and income as well as health and lifestyle practices, and 2) has been proven to be one of the most reliable socioeconomic status (SES) predictors of prenatal care outcomes (Baron et. al, 2015; Silva et. al, 2010; Timmermans et. al, 2011). Research shows that a lower level of education contributes to adverse birth outcomes such as preterm and stillbirth, poor fetal growth patterns, as well as effects on one's general health and lifestyle choices such as smoking (which is known to increase the risk of myriad health complications for mothers and newborns) (WHO, 2016; UNESCO, 2013; Parker, Schoendorf, & Kiely, 1994; Norwegian Institute of Public Health, 2018-b; Agyemang et. al, 2009). In 2019, it was recorded that 25.3% of the population were educated below the level of upper secondary education (less than ten years of education) (Statistisk Sentralbyrå, n.d.). A number of studies analyzed birth registry and census data from 1981 to 2000, finding that women in Norway with less than ten years of education experience the highest rates of 'very' and 'moderately' preterm birth

(Petersen, et. al, 2009), stillbirth (Rom et. al, 2009), and poor fetal growth (Mortensen et. al, 2008). The rates of both preterm and stillbirth decreased among women with 10-12 years of education, and was lowest among those with greater than 12 years of education (Petersen et. al, 2009; Rom et. al, 2009). The same trends were found for the fetal growth factors low birth weight and being small for gestational age (SGA). Infants born to mothers with less than ten years of education had the highest rates of low birth weight and SGA, with decreasing rates among women with 10-12 years of education and the lowest rates among the mothers with more than 12 years (Mortensen et. al, 2008). All four outcomes – preterm birth, stillbirth, low birth weight, and SGA – are indicators of prenatal health and allude to sociodemographic inequalities.

Additionally, a study on breastfeeding by Norwegian mothers showed that women of lower educational attainment breastfed at smaller percentages than those with higher educational attainment (Bæring et. al, 2017). This author recognizes the stigmatization around mothers not being able to breastfeed, but would like to point out that for those who can, breastfeeding results in lower risks of infection and is a vital source of nutrients for physical and hormonal development, among many other positive benefits for infants and mothers. The WHO recommends that children be exclusively breastfed for the first six months of life, and from six months to two years receive a supplementary diet in addition to still being breastfed (WHO, 2016). While still in the maternity ward, 85% of the most educated mothers in Norway exclusively breastfed while 77% of the least educated mothers did, and after five months 22% of the most educated mothers exclusively breastfed as compared to only 7% of the least educated mothers (Bærug et. al, 2017). There was no further information on how the individuals in these two studies utilized prenatal care in Norway (frequency of visits, etc.), but the existence of such a gradient in health outcomes for women in the same country alludes to inequities in health as a result of education level.

The poorer health outcomes resulting from lower levels of education further extrapolates to the greater Norwegian population, with women educated to the “lower secondary education” level (less than ten years of schooling) living 5-6 years less than those with some university or college education (Norwegian Institute of Public Health, 2018-b). Across the population and without regard for education level, the differences in women’s lifespans between municipalities range 8-10 years, with the lowest lifespans experienced primarily in the Northern municipalities. It is believed that key reasons for such trends may be attributed to lifestyle choices such as smoking, as well as other social determinants of health like income. According to the Norwegian Institute of Public Health (2018-b), there is

an inverse correlation between smoking status and income in addition to the inverse correlation between smoking status and education. As in, a woman who smokes is more likely to be less educated and/or have a lower income.

Such correlations between smoking and level of education are especially interesting when adding immigrant status to the comparison. For the majority of immigrant groups in Norway coming from non-European or “non-Western” countries (accounting for 10.8% of the population in 2020) (Statistisk Sentralbyrå, n.d.), general health is unequal to and worse than that of Norwegians. It has been studied that immigrants from South Asia (India, Pakistan, and Sri Lanka) have higher rates of type 2 diabetes, mental health problems, stillbirth, and complications during birth (Ministry of Health and Care Services, 2007). The rates of type 2 diabetes among 30-59 year olds in 2000 were 28% in women from South Asia and 3% among women from Western countries. The highest rates of diabetes among individuals from Western backgrounds were found in those with lower income and shorter education (Ministry of Health and Care Services, 2007). These figures are among a population that doesn’t cover the typical childbearing age, but the trends are believed to hold true among younger populations as well, at least among “newer” immigrants. Diabetes is an important factor to consider in this analysis, as its existence in pregnancy can lead to complications with both mother and fetus and during labor and birth. The Norwegian Ministry of Health and Care Services (2007) have also studied the prevalence of mental health problems among immigrants and ethnic Norwegians, finding that immigrants from non-Western countries tend to have higher rates of mental health problems, attributed to psychosocial factors including “lack of integration in Norwegian society, experience of discrimination, including in the housing market, and a general experience of powerlessness.” This same data reports that while 12% of immigrants from Western Europe and the United States suffer from psychological stress; twice as many immigrants (24%) from Asia and Africa do.

As it pertains to prenatal and maternity health, immigrant and ethnic inequalities do not reflect a much different picture. To comment again on poor mental health, women from the Middle East and Asia are more susceptible to depression in pregnancy as compared to women from Western Europe and Norway (Norwegian Institute of Public Health, 2018a). Again, this is most likely due to poor social networking and integration as well as discrimination. Among immigrants from Pakistan, Afghanistan, Somalia, Sri Lanka, the Philippines, and other countries with high rates of perinatal mortality, the rates of perinatal mortality in Norway are highest – higher than the rates experienced by Norwegians –

although lower than in their respective countries of birth (Naimy, Grytten, Monkerud, & Eskild, 2013). The average perinatal mortality (fetal or infant death between the last few weeks of pregnancy and one year after birth) across the whole Norwegian population was 3.2 deaths per 1000 births in 2019 (Statistisk Sentralbyrå, n.d.). Stillbirth and congenital malformations are higher among Pakistani women than Norwegians, and women from Somalia experience the highest rates of complications during birth (including emergency cesarean section, post-term birth, and having SGA infants) of all immigrant groups (Ministry of Health and Care Services, 2007; Norwegian Institute of Public Health, 2018a; Bakken, Skjeldal, & Stray-Pedersen, 2015). Additionally, low birth weight is most common among immigrant women from Africa and Southwest Asia (Norwegian Institute of Public Health, 2018a). What is interesting about this information as it compares to the research on education, income, and smoking status is that research shows that most immigrant women tend to partake in less risky health behaviors than the Norwegian population. According to Grøtvedt et. al (2017), immigrant women are reported as smoking less (at about 5%) than Norwegian women (8%) in the period of 2013-2014. The same research does however report that about 35% of immigrants had low levels of educational attainment as compared to 20% of Norwegians in 1999-2000.

One positive that may be derived from available research is that immigrants' health inequalities tend to decrease rather drastically with increased time spent in Norway. Kinge & Kornstad (2014) studied the effects of assimilation into Norwegian society on infant mortality and found that their theory of acculturation holds true, that the longer an immigrant woman stayed in Norway, the more "native-born behaviors" she would adopt, and through a gained familiarity with the health care system her utilization of health care services would more closely equal that of a Norwegian. This study found that infant mortality, which was highest among immigrant women from Africa and second highest among immigrants from Asia, decreased as the number of years since migration increased. In fact, infant mortality among immigrant women living twenty or more years in Norway was at an estimated rate lower than that of the Norwegian population.

Unfortunately though, health inequalities are experienced by more groups than just non-Western immigrants in Norway, and the Indigenous Sami and Kven populations (accounting for approximately 7.7% of the population) are not immune to health inequalities. (Note: 7.7% is only representative of Indigenous people living North of Saltfjellet (mid-North) in Norway) (Statistisk Sentralbyrå, n.d.). There is a serious lack of research done on the health of Indigenous people in Norway. This is likely due to the rather recent, long-

standing history of government-forced assimilation into the majority Norwegian population, but of the research that has been conducted, health inequalities prove to be considerable and primarily rooted in discrimination. In a 2003-2004 survey of self-reported health conducted in areas of mixed Sami, Kven, and Norwegian population (from central to Northern Norway, much of the area also known as Sápmi among Indigenous groups), poorer health was reported among the Sami and Kven populations than the Norwegian majority, with women in particular reporting worse health than men (Lenert Hansen, Melhus, & Lund, 2010). The same study showed that “Sami speaking patients were less satisfied with the municipal medical services overall than the Norwegian speakers,” and that they experienced more misunderstandings due to language, and subsequently had less satisfaction with the language proficiency of their doctor (Lenert Hansen et. al, 2010; Ministry of Health and Care Services, 2007, ch. 2). In addition, one third of the Sami population who speak Sami and have parents and grandparents that also speak Sami reported facing discrimination due to their Indigenous heritage. If the self-reported health inequalities between the majority Norwegian population and the Sami and Kven populations were not, in themselves, bad enough, there are also plenty of studies reporting the effects of discrimination on individuals’ health. Discrimination creates rifts between ethnic groups that can lead to differences in SES and restricted access to jobs, goods, and services. As it pertains to health, discrimination can affect minorities by leading them to “internalize the majority population’s discriminatory ideologies,” which can cause negative health-related outcomes as minority populations attempt to tackle “the burden of dealing with two sets of cultural skills and references, identity issues, self-esteem and despair,” (Lenert Hansen et. al, 2010). Such outcomes of discrimination can be extended beyond just Indigenous populations to, once again, non-Western immigrant populations.

The Netherlands

Primary variables of inequality: geographic location (neighborhoods), ethnicity/immigrant/western vs. non-western, education

The Netherlands had 8.7 million registered women in 2019 (Statistics Netherlands, 2019). The most frequently researched variables in the Netherlands that have an effect on equality in prenatal care and health outcomes are geographic location (particularly the neighborhood one lives in), one’s ethnicity or immigrant status (if an immigrant, whether they come from a “Western” country or not) (De Graaf, Ravelli, de Haan, Steegers, &

Bonsel, 2013), and level of education (used mostly as a proxy for socioeconomic status) (Timmermans et. al, 2011). First, and with the most extensive body of research, is the effect of one's neighborhood on health outcomes. And more specifically, how pregnant women's health is affected by their inhabitation in "deprived districts." De Graaf et. al (2013) and Timmermans et. al (2011) explain deprived districts to be "defined by" their rates of (un)employment, average income, violent crime, level of education, integration, and housing, as laid out by the Dutch index of deprivation. These areas experience the same negative health outcomes as those experienced in "non-deprived" areas, but unfortunately tend to do so at much higher rates. Adverse health outcomes among pregnant women include: higher rates of fetal mortality (death of a fetus still in the womb), perinatal morbidity and mortality, pre-eclampsia, higher risk that infants are SGA and/or premature, and a likelihood that women access care too late after the onset of pregnancy (de Graaf et. al, 2013; Agyemang et. al, 2009; Timmermans et. al, 2011; Poeran et. al, 2013). As may be anticipated, such outcomes are typically worsened for immigrant women from non-Western countries, women that have less education, and those with lower levels of income.

In the whole of the Netherlands, infant mortality (death from birth to one year) in 2019 was at 3.5 deaths per 1000 births (Statistics Netherlands, 2019). In the period 2002-2006, fetal mortality was found to be higher in all deprived neighborhoods in the four biggest cities in the Netherlands (Amsterdam, Rotterdam, The Hague, and Utrecht), with the greatest disparity in Amsterdam, where the rate of fetal mortality *averages* 10.4% in deprived districts compared to 5.6% in non-deprived districts (de Graaf et. al, 2013). These rates were "universally worse" for women with non-Western backgrounds. Perinatal mortality, a primary indicator of health in pregnancy that is often used to judge the quality of care received, is measured by Vos, Denktas, Borsboom, Bonsel, & Steegers (2015) and de Graaf et. al (2013) as fetal/infant mortality between 22 weeks of gestation and 7 days postpartum. (Therefore, a portion of what is considered fetal mortality in these studies is also included under the umbrella of "perinatal".) The average perinatal mortality in deprived districts of the four largest cities was 13.5% of births, while non-deprived districts in these cities experienced an average of 9.3%; the averages were 8.9% for Dutch inhabitants, 8.6% for other Europeans, and 12.9% for non-Western inhabitants (de Graaf et. al, 2013). In a similar study, Vos et. al (2015) studied perinatal mortality in 15 (unspecified) municipalities, finding that the rates ranged from 10.1% to 15.4% in the least and most deprived districts, respectively. This same study also researched perinatal *morbidity* – the single or combined presence of SGA, preterm birth, congenital disorders, and/or Apgar score of <7 after 5

minutes – finding the average rate of morbidity to be 17.3% in the least deprived areas and 23.6% in the most deprived. (Apgar score is a method of measuring newborn physical functioning immediately following delivery.)

An infant born SGA and/or premature are signifiers of poor health both pre-pregnancy and during. Research by Agyemang et. al (2009) and Timmermans et. al (2011) found that pregnant women in low-income neighborhoods as well as neighborhoods with higher rates of unemployment and use of social security benefits were at greater risk for pre-eclampsia, perinatal mortality, and giving birth to babies that were SGA and/or premature, as compared to their counterparts in “less deprived” districts. These studies also found that the mothers in deprived neighborhoods tended to be less educated, more likely to smoke, be obese, have STDs, and suffer from psychopathology. The mothers in deprived neighborhoods are also more likely to have a non-Western minority background rather than a Dutch background. With the exception of minority background, the listed health factors are all well known to have direct negative effects on prenatal health. Therefore it comes with little surprise that research in the Netherlands reports poor outcomes correlated with demographic, socioeconomic, and differing health statuses. To be discussed later is the fact that there are more women of non-Western backgrounds than Dutch women living in these “deprived” areas.

As indicated, a significant share of research reports that being non-Western or of an ethnic minority background in the Netherlands results in substantially higher risks for every adverse perinatal outcome studied. Zwart et. al (2010) defines “Western” immigrants to the Netherlands as those from other European countries, North America, Japan, and Indonesia, and uses “ethnicity” to define one’s geographical ethnic origin, country of birth, or if born in the Netherlands, the birthplace of one’s parents. All immigrants account for 23.7% of the Dutch population, and though there wasn’t a statistic available for non-Western *immigrants*, the non-Western ethnic population makes up 13.3% of the total (Statistics Netherlands, 2019). Mothers and pregnant women in non-Western minority groups were much less likely than Dutch women to consider their overall health as “excellent” or “very good,” (Choté et. al, 2011). It has also been found that non-Western immigrants are 1.3 times more likely (than the average rate) to develop severe acute maternal morbidity (SAMM), or any life-threatening complications associated with pregnancy, delivery, and puerperium (the period up to six weeks post-birth). Although, there are differences in the rates at which ethnic minorities experience SAMM, with no increased risk for Moroccan or Turkish women, yet a 3.5 times higher risk for women from sub-Saharan Africa (Zwart et. al, 2010). One of the

primary hypotheses cited for such outcomes is that a language barrier exists between some immigrants and their care providers. An important point to be discussed later is that the risk of developing SAMM among Western immigrants to the Netherlands is comparable or often lower than the risk that Dutch women face, despite the language barrier assumption.

There is also research proving that women of ethnic minority groups are at a higher risk for ‘avoidable’ mortality – when effective measures against a premature death exist that include “appropriate preventive measures and treatment procedures on time”, mortality is considered avoidable (Stirbu, Kunst, Bos, & Mackenbach, 2006, p. 2). The risk of mortality from pregnancy-related conditions among ethnic minority women was almost 3.4 times as high as their Dutch counterpart. These women are twice as likely to die from infectious diseases than the Dutch majority, and three times as likely to die from diabetes and other chronic illness (Stirbu et. al, 2006). It is necessary to note that similar to SAMM, not all non-Western women are affected the same, and therefore the burden of disease varies among groups.

Late entry into prenatal care is a significant factor that plays a role in health during pregnancy and birth, with those that start care after the first trimester (later than 14 weeks) risking not receiving the educational advice/guidance they would otherwise get early on and delayed screenings for early detection of adverse pregnancy outcomes that are performed in the first trimester. As found by both Choté et. al (2011) and Posthumus, Schölmerich, Steegers, Kawachi, & Denктаş (2015), the percentage of non-Dutch women entering care late was higher than the percentage of Dutch women, with 36.1% of non-Western women entering care late and 14.5% of Western women doing so.

As witnessed in Norway, socioeconomic status, particularly education level, plays a considerable role in pregnant women’s experience of the health care system. Vos et. al found that socioeconomic factors “contributed to adverse perinatal morbidity by up to one third (33%) in some municipalities, with the lowest effects [of SES on morbidity] being 15% and 16%,” (2015, p. 5). In the Netherlands, the education level of the pregnant woman has been found to have a noticeable effect on fetal growth, the woman’s health control beliefs, obesity, and smoking status (Silva et. al, 2010; Baron et. al, 2015). According to Statistics Netherlands (2019), about 30% of the population has only lower secondary education. Low educated women tend to give birth to lighter babies, resulting from fetal growth among them being much slower in later pregnancy (Silva et. al, 2010). This may in part be due to the findings by Baron et. al (2015) listed in the remainder of this paragraph. Smoking is eleven times more likely among the lowest educated, and still four times as likely among mid-

educated as compared highly educated women. Another reason for slow fetal growth may be that women with less education are reported less likely to take folic acid supplements or to attend prenatal care appointments. A woman's choice to smoke, not take folic acid supplements, and/or not attend prenatal appointments may further be a result of her propensity for low health control beliefs (the belief that she does not have the ability to control her own health through behaviors), which is ten times more likely among low educated women. It is possible that low health beliefs may also be a result of or contributing factor to the finding that depression and anxiety are twice as likely among those with the lowest levels of education. In addition, depression and anxiety is also twice as likely among non-Western ethnic groups, which are more likely to rate general health functioning as poor.

Michigan

Primary variables of inequality: geography (neighborhood), race and/or immigrant status, socioeconomic status (education)

Michigan's registered female population was 5.1 million in 2019 (US Census Bureau, 2020). Factors contributing to health inequalities in Michigan are similar to those in the Netherlands and Norway. Michigan's history of (primarily automobile) manufacturing well into the 1900s has led to a fair amount of health inequality research in its post-industrial cities. For many, these are the sites of substantial racial and ethnic segregation, poverty, socioeconomic decline, and as may be expected, vast health inequalities. Because race proves to have a significant effect on prenatal outcomes, the relevant racial makeup in Michigan is as follows: 14.1% non-Hispanic Black, 5.3% Hispanic, 0.7% Indigenous, 2.5% mixed race, and 74.7% non-Hispanic White (US Census Bureau, 2020). As was seen in the Netherlands, one's neighborhood and geographic location plays a consequential role in health outcomes for pregnant women. In "deprived" neighborhoods in Michigan and across the United States, we find effects on the risk of preterm birth, SGA infants, low birth weight, the utilization of prenatal care, and smoking during pregnancy. The risks of these health outcomes and inputs are found in most studies to vary greatly by race and/or ethnicity, and separating the research into purely neighborhood-based or race-based outcomes is challenging as the majority of studies combine elements of both. But, among the parts of studies focusing solely on neighborhood influence on health outcomes, findings show that risks of preterm birth increase among women living in deprived geographical areas, and that these risks are

exacerbated when women have personal low socioeconomic positioning (Pickett, Collins, Masi, & Wilkinson, 2005; Grady & Darden, 2012; O'Campo et. al, 2007; Geronimus, 1996). Research by Grady & Darden (2012) and Elo et. al (2008) finds that the risk of SGA is also greater among women living in deprived neighborhoods in Michigan and nationwide.

O'Campo et. al (2007) studied eight deprived geographic areas in the US – one of the areas being combined data from 16 cities in Michigan – for correlations of neighborhood deprivation and rates of specific adverse pregnancy outcomes among non-Hispanic Black and non-Hispanic White women (hereafter, Black and White, respectively). Their findings concluded that the proportion of preterm birth among Black mothers in Michigan was 13.6% compared to 7.3% for White mothers. Data from 2004 across the eight geographic areas showed equally dismal rates for infants born low birth weight, very low birth rate, and preterm to Black mothers at 13.7%, 3.1%, and 17.9%, respectively. The corresponding rates for White mothers were 7.2% for low birth weight infants, 1.2% very low birth weight, and 11.5% preterm. Across the United States, the rate of infant mortality among Black women (13.9 per 1000 births) is 2.4 times higher than it is for White women (5.8 per 1000), and in Michigan the rate is just under two times higher (O'Campo et. al, 2007). Michigan's average infant mortality (death within the first year of life) was 6.6 per 1000 in 2019 (US Census Bureau, 2020). It was also found that more Black people (mothers) lived in deprived areas than did White people (mothers) (Elo et. al, 2008), again supporting findings that report women living in deprived areas have higher risks of preterm birth and low birth weight infants (Pickett et. al, 2005; Grady & Darden, 2012; Collins & David, 2009; Copper et. al, 1996; and Bell, Zimmerman, Almgren, Mayer, & Huebner, 2006; Geronimo, 1996). As was found in Norwegian and Dutch research, infants born SGA is an important signifier of maternal health in pregnancy and it is found that in metropolitan areas across the US (Elo et. al, 2008) and among women with high levels of maternal stress (Copper et. al, 1996) that rates of SGA are significantly higher.

Research shows that it is more common for Black women to live in geographic areas or neighborhoods in which their likelihood to encounter daily and/or chronic stress from an array of inputs is higher than it is for White women. Copper et. al (1996) found that both low birth weight and spontaneous preterm birth, defined as a birth occurring between 25 and 35 weeks of gestation following “preterm labor or preterm rupture of membranes” (p. 1287), are significantly correlated with high levels of maternal stress, and that being Black is a “strong risk factor for” spontaneous preterm birth (p. 1290). Copper et. al (1996) further reports the following: the “risk factor” of being Black results in a 1.65 times higher chance that a woman

will give birth preterm and a 2.06 times higher chance of low birth weight (p. 1291); this holds true even when all other demographic risk factors are controlled for. Rates of spontaneous preterm birth are 5.3% for all women categorized as being in the highest quartile for maternal stress compared to 3% for less stressed women (p. 1288). Maternal stress also has an impact on rates of low birth weight, with 13.5% of the most stressed and 9.6% of the least stressed giving birth to children of low weight (p. 1288). Both spontaneous preterm birth and low birth weight continue to be significantly affected by stress – albeit at lower levels – even after other socioeconomic factors are controlled for. (It is worth noting that there is an obvious likelihood that a baby born preterm will also be of low birth weight.) The details of stress inputs, how they function systemically, and how they disproportionately affect the Black population in the United States and Michigan will be taken up in the discussion.

The research of Bell et. al (2006) and Pickett et. al (2005) focuses on racial “isolation” and “clustering” within geographical areas, and the effects these types of segregation have on pregnancy outcomes. Defined in Bell et. al (2006), racial residential isolation is when a small pocket (census “tract”) of a neighborhood is primarily one race while the surrounding tracts are predominantly made up of another race. Clustering is neighborhood/tract homogeneity, where many areas sharing a border are populated by the same race. It has been found that higher residential isolation is related to adverse pregnancy outcomes (Pickett et. al, 2005) including low birth weight, prematurity, and fetal growth restriction, while more clustering is associated with more optimal outcomes (Bell et. al, 2006). These trends hold true among models that control for both individual- and area-level SES. Fittingly, both studies reported that although Black women are more likely to live in neighborhoods/tracts with high levels of deprivation, living in racially clustered tracts resulted in higher birth weights and lower risks of preterm birth. Conversely, living in racially isolated tracts in which they were the racial minority increased adverse pregnancy outcomes (Bell et. al, 2006; Pickett et. al, 2005). Interestingly, the negative effects of racial isolation remain even when a Black pregnant woman has a higher income than the average of those in her surroundings. A college-educated Black woman living in a racially isolated tract also has a higher risk of the negative health outcomes than college-educated White women living in the surrounding tract(s) (Pickett et. al, 2005). The studies conclude that although racial segregation between neighborhoods contributes to many negative consequences, clustering appears to have a protectionary effect against adverse pregnancy outcomes among Black mothers. This topic will also be explored further in the discussion.

The above-mentioned Bell et. al (2006) study chose to exclude foreign-born Black women from the analysis due to the tendency for counterintuitive prenatal outcomes among “new” immigrants to the United States and Michigan. The average rate of preterm birth in Michigan among foreign-born mothers (6.4%) was found by El-Sayed & Galea (2012) to be lower than the average rate for US-born mothers (8.4%) despite the fact that prenatal care provision/utilization was more frequently inadequate among foreign-born women. Seemingly contradictory to this finding, although an instinctual assumption is that preterm birth is nearly twice as high among mothers with inadequate prenatal care. Low and very low birth weights among foreign-born Black women trend similarly to the rates of US-born White women, while US-born Black women (as explained by the previous studies) experience much higher rates of these two outcomes (Collins & David, 2009). Collins & David (2009) also report that among Mexican-Americans, first generation/Mexican-born immigrants actually give birth to fewer low birth weight infants than US-born White Americans, but that second generation/American-born Mexican-American women give birth to more low birth weight infants. In a similar vein, African- and Caribbean-born Black immigrants to the US birthed girls weighing more than the babies of US-born Black women, but when the daughters of these immigrant mothers that were raised in the US had their own children, these babies weighed less than their mothers and more on par with babies born to US-born Black women. Both studies refer to the possible explanation of the “healthy immigrant/migrant effect,” which is the theory that immigrants to the United States may be among the healthiest of their country of origin as good health may be a predictor of immigration in the first place (El-Sayed & Galea, 2012; Collins & David, 2009). Interestingly, this contradicts the findings about non-Western immigrant health in Norway and the Netherlands, where first generation immigrants tended to have worse pregnancy outcomes than Norwegians and Dutch women, but outcomes became more positive with more time spent in the country. These conflicting findings allude to implications about the types of immigrants moving into high-income countries and perhaps suggest differences in views on integration/assimilation within Norway, the Netherlands, and the US. These topics will be examined in the discussion.

Lastly, socioeconomic status is another factor that has been found to have significant effects on pregnancy outcomes. Similar to the studies in the Netherlands and Norway, level of education has been the most widely studied SES factor, and similar to the European countries, education is proven to have adverse consequences on prenatal outcomes. In Michigan, 9.5% of the population is “low educated,” having completed less than a high school level (US Census Bureau, 2020). Low levels of education in the US contribute to

worse health outcomes (Pickett et. al, 2005) such as low birth weight, SGA, and preterm delivery (Parker et. al, 1994). Again these consequences were exacerbated if a woman was Black compared to White. White mothers with <12 years of education and/or those that were poor had double the rate of low birth weight and SGA infants than White women with ≥ 16 years of education or that were of higher income; Black mothers with <12 years education and/or that were poor had an increased likelihood of low birth weight and preterm birth (but not SGA in this research) than more educated and/or wealthier Black mothers (Parker et. al, 1994).

4.7 Summary of main findings

Through this systematic analysis, it was found that all three countries exhibit significant examples of health inequalities. Being a non-Western immigrant, Black, Indigenous, low educated, of low socioeconomic positioning, and/or living in a “deprived” neighborhood is correlated with an increase in the likelihood of numerous negative pregnancy outcomes. The same trends are observed in Norway, the Netherlands, and Michigan, simply with variations in what specific populations are affected. The only exception is that non-Western immigrants experience a reversal of trends between the European and American states (in Norway and the Netherlands, they experience more initial inequality that decreases with time spent in the country, while immigrants to the US have relatively low rates of adverse outcomes upon arrival, these rates increasing over time). However, non-Western immigrants face health disparities in all three countries at some point or another. It appears that the offer of comprehensive prenatal care services that align with WHO recommendations does not have the predicted ascertainable effect on the existence of inequalities. Being that each system exhibits a considerable number of affected populations, all of which make up substantial proportions of the respective populations, system configuration and universality cannot plausibly be drawn as the only – or at least primary – inputs contributing to health inequities/inequalities. Whether a National Health Service, Social Insurance, or fundamentally private model, health inequalities persist in the face of widely affordable, seemingly accessible, and fundamentally equal offers of prenatal care services.

Chapter 5: Discussion

This body of work has sought to find what types of health inequalities are prevalent in Norway, the Netherlands, and the United States/Michigan, and whether or not one of the system configurations results in more equal health among pregnant women. Using comparative health policy and a systematic review of health inequality literature it is confirmed that there is very little differentiation in prenatal health equality between the three countries, as each shows signs of significant and similar trends of disparities within their populations. Although all three countries offer prenatal care services that align with recommendations of the World Health Organization, the findings indicate that adverse pregnancy outcomes such as preterm and stillbirth; low birth weight infants; fetal, infant, perinatal, and maternal mortality; and poor fetal growth still exist, the rates of which vary greatly – and more negatively – based on being part of a demographic minority or of lower socioeconomic status. Indigenous women in Norway; non-Western immigrants in Norway and the Netherlands; US-born Black and Hispanic women in Michigan; and inopportunately located, low educated, and low-income women regardless of country of residence were found disproportionately affected by unequal outcomes. There were some minor exceptions, such as Turkish and Moroccan women in the Netherlands experiencing rates of severe acute maternal morbidity more equal to that of Dutch women, but these exceptions were rare and largely inconsequential. The main findings showed that not being well educated, not having a relatively high or stable income, and not being a part of the majority or White population in these three HICs proves to be a disadvantage to one's health.

Considering all countries studied showed similar prenatal care inequalities, few correlations between system formulation/universality and its effects on women's health can be assumed. My hypothesis that equal offers and provision of prenatal care would lead to greater equality is therefore negated, due to 1) the existence of distinctive inequalities in all of the systems even though, 2) all systems meet the WHO recommendations for service offers. Simply because a woman may have the equal right to comprehensive prenatal services through her Norwegian, Dutch, or American health insurance does not mean that her utilization of the services will be equal to her counterparts, nor that the factors affecting her utilization are equal. Other intersections of the individual's identity – race, being of an immigrant or Indigenous background, being poor or low educated, among others – quite notably affect their ability and inclination to access their right to services. A core contribution to this research is thus the conclusion that other social determinants of health (circumstances

under which individuals are born and raised, where they work, live, and age) play an equally significant and possibly even greater role in health outcomes and equality. Accordingly, the following will address how social determinants affect prenatal outcomes.

All countries reported negative outcomes for women with low SES, and specifically low levels of education. The majority of research studying these correlations hypothesize that the reason for this is the tendency for people with less education to engage in more risky health behaviors. The main culprit was smoking. Research from all three countries found an increased likelihood of smoking among less educated women, and a significant proportion of the research found the likelihood to decrease with increasing education. The negative effects of smoking on one's general health and prenatal outcomes are exceedingly well known. Women of low education tend also to rank lower on other measures of SES like employment, income, and the neighborhood in which they live. As stated in the findings, an extensive body of research studying the effects of one's neighborhood on health exists, and the effects are often attributed to the fact that local characteristics and lifestyles tend to be contagious (Timmermans et. al, 2011). A non-smoker living in an area with high rates of smoking may take up the habit because it is so normalized in their immediate surroundings.

Neighborhood effect on prenatal health is both extensive and nuanced, as the inputs into neighborhood's significance reach into just about every aspect of an individual's life. Living in a deprived neighborhood is virtually synonymous with low socioeconomics and low investment in infrastructural supports in the forms of: poor transportation, food availability, and quality of education; unfair housing regulations; increased pollution; fewer green spaces/parks; and increased crime, among many others (Agyemang et. al, 2009; Timmermans et. al, 2011; Pickett et al, 2005). This translates to unequal availability of necessary resources for pregnant women as well as the general population. With such inequalities in the spaces individuals inhabit, it is clear why prenatal health in deprived neighborhoods tends to be inferior as compared to non-deprived neighborhoods. One can imagine that with poor systems of support in their immediate surroundings, it would not be easy for an individual to simply change their position by moving, assuming they even had the opportunity to do so. This is what is meant by systemic inequalities. The fact that there exist such deprived neighborhoods in the first place is an instance of inequity and, according to Pickett et. al (2005), "variation in the quality of neighborhood environments is a result of the inequitable economic and class structure and the unequal distribution of resources in society," (p. 2230). Agyemang et. al (2009) adds that such inequities are "the consequence of historical, political, cultural and economic processes," (p. 755). With these ideas in mind,

adhering to the WHO recommendations for prenatal care and/or offering those services with minimal financial burden may only offer so much assistance in mitigating inequalities within a system that allows for deeply entrenched inequalities from one neighborhood of a municipality to the next.

As introduced in the studies by Copper et. al (1996) and Bell et. al (2006), “prolonged and heightened stress” and the “weathering hypothesis” may be the root cause of poor birth outcomes among Black women in the US and Michigan rather than simply access to prenatal care. These components serve to further explain neighborhood correlations with health. The presence of stressors within deprived neighborhoods include but are not limited to: prevalence of crime, overt racism and discrimination, financial instability and insecurity, and lack of health-preserving resources. Studies have shown that because racial and ethnic minorities tend to have a lower socioeconomic position and subsequently live in deprived neighborhoods, they are at a considerably higher likelihood of experiencing chronic and regular psychosocial stress. This stress may lead to changes in physiology including “increased cortisol, altered blood-pressure response and immune system compromise,” as well as desensitization to “increased cardiovascular reactivity, which triggers higher pulse and blood pressure,” (Bell et. al, 2006, p. 3032-3033). Nearly identical findings were reported by Collins & David (2009). These physiological changes are important because all of the listed consequences of stress can intensify the risks of premature birth and impaired fetal growth. Additionally, hypertension in pregnancy (also linked to adverse prenatal outcomes) disproportionately affects Black women. It was evidenced that both the Netherlands and Michigan report negative effects of living in deprived neighborhoods; this author believes that increased subjection to stress is a valid explanation.

The weathering hypothesis, similar in thought to stress as a negative input, is the theory that the effects of social inequalities compound with age on populations’ health, and that this compounding leads to “growing gaps in health status through young and middle adulthood that can affect fetal health,” (Geronimus, 1996, p. 590). As discussed above, social inequalities and effects of living in deprived areas have adverse outcomes on individuals’ – and mothers’ – health. The research done by Geronimus (1996) actually concluded that due to weathering, Black women in the US had increasingly negative pregnancy outcomes as they aged from 15 to 34, while White mothers had increased risks from 15-19 and over the age of 30, with the lowest risks in their 20s (a more intuitive finding).

From such information, it might be natural to assume that women of racial and ethnic minorities would fare better living in neighborhoods where they are surrounded by people of

higher socioeconomic status, as the influence of presumed healthier behavior would influence their own. But as was reported in the findings, the effects of stress and weathering tend to be greater when Black women live in more isolated tracts in which they are surrounded by mixed-race or predominantly White neighborhoods. The same is true for White women living in predominantly Black or mixed-race tracts. This may even simply be due to discrimination or feelings of being judged. The discourse on neighborhoods seems to be a double-edged sword as it pertains to Black Americans. Living in areas that are disadvantaged socioeconomically causes adverse prenatal outcomes, but so does living in neighborhoods that are of higher socioeconomic status but mixed-race. Pickett et. al (2005, p. 2235) deduces that “the positive effects of a better socioeconomic context may be countered for minority women by the adverse effects of racism or racial stigma... We interpret our findings as suggesting that material benefits are outweighed by psychosocial disadvantage.” It is necessary to add, with the support of Bell et. al (2006) that such findings in favor of racial clustering (residential segregation) should by no means be used as justification for systemic practices that promote and perpetuate racial residential segregation, as there is sufficient evidence on the harmful effects on health and equality of opportunity as a result of segregation.

The one exception to nearly equal findings between each system was immigration. In the two European countries, being a non-Western immigrant meant poorer overall and prenatal health despite equal access to all recommended health services. Although, non-Western immigrant women saw decreases in negative pregnancy outcomes with increased time in the country. The exact opposite was found true in the United States and Michigan. As stated, a justification by US scholars for immigrant women of color having such positive prenatal outcomes is the “healthy immigrant effect.” This assumes that the healthiest of a population are the ones that immigrate to the United States. If this theory is true, which I believe it is as the US is rather selective about who it allows to immigrate to the US, my hypothesis is that the two European countries may be more relaxed about the socioeconomic and demographic factors of those they allow to immigrate there. Unfortunately research into immigration legislation is beyond the scope of this study. Based on the research, it appears that being a person of color in the US is the problem, as non-Western, non-White immigrants to the US see deteriorations in health with time spent in the country. In Norway and the Netherlands, the problem may be strong cultural learning curves, as prenatal outcomes improve with time spent in the country. The solution here appears to be assimilation into the majority population, although this does not explain remaining health disparities among non-

pregnant immigrants. Additionally, it is interesting to consider that assimilation may be a negative achievement in the United States, especially considering that non-Western immigrants of color end up experiencing more negative health outcomes with time spent in the US.

Lastly, I was unable to draw correlations between Michigan or the Netherlands and the Norwegian Indigenous populations, but one can assume that a significant aspect of their experiences with poorer health outcomes is related to the aforementioned weathering and social stress theories. According to Lenert Hansen et. al (2010), Sami individuals that experienced the most frequent discrimination also reported the greatest health inequalities. Again, the internalization and compounding of persistent discrimination may be a factor holding more weight than the access to necessary health services.

The fact that these states ended up exhibiting so many relatively similar inequities was perplexing at first. According to the World Health Organization, the right to health is one of the fundamental pillars of human rights; through that I believed equality in prenatal care outcomes would be achieved as long as the studied states adhered to the WHO's policy recommendations. For the record, I also believed that some states would not fulfill each recommendation in their regulation of required services and/or that the costs of provision of services would be burdensome enough that they would not be utilized. The Netherlands, Norway, and Michigan all meet the requirements for a "positive pregnancy experience," but it is their adherence to positive and negative rights that deems them truly in alignment with a human right to health or not. As stated, Norway and the Netherlands have health care systems based in universality and attempt solidarity through that universality, implying that they place value on the right to health. The private system in Michigan gives inhabitants the right to purchase health insurance, but it also gives them the freedom from intrusion and therefore the right to not purchase insurance if they so choose. Consequently, this part of the health insurance system reflects negative rights and a further misalignment with the right to health. Michigan's public system fulfills the same principles of solidarity through universality as it attempts to provide individuals with insurance who otherwise would not have it. Because of this, the public system supports positive rights and again, the right to health for all. What is perplexing about these conclusions is that whether or not a system seems to support the right to health through legislation or not, there remain health inequities.

Although the systems with positive rights use their regulative power to try and perpetuate equity, we see that inequity remains as per Daniels' (2007) definition: the health inequalities experienced are unnecessary, unfair, and results of unjust distributions of

controllable factors. The distribution of resources in this context go beyond just health care provision and in order for states to create true equity, all social determinants of health that regulating and legislative bodies have control over must be critically analyzed for their properties that maintain inequities.

Limitations

Unfortunately conclusions could not be drawn about any particular system's "superiority" in avoiding health inequalities and thus the outcomes of this research weren't realized in the anticipated fashion. Although demographic information is largely publicly available, the intersections of these demographics and all possible combinations of identity are not. It was thus not feasible to rank which states have "more" or "less" inequality of health outcomes as hypothesized. Comparing trends in inequality is both possible and informative, but attempting to score countries on their "levels" of inequality, although in theory educational and enlightening, is not as simple. Furthermore, this type of research does not lend itself to deducing direct causality between system model variations and health outcomes, and to conclude such causality would require significantly more and different data and research, if it could even be realizable. An exceptional situation in which one could assume causality would perhaps be if one country showed absolutely no signs of inequality while the other(s) did, or if only one very small group within a given population was affected while many, larger groups were affected in the other population(s). Even so, that would assume all other factors outside of the ones studied are held constant between the countries, which is essentially inconceivable. Even access to services judged by offer and out-of-pocket cost was not a viable way to measure inequity in this study due to the conflicting information on co-pays in Michigan. If we were only to compare the public systems – for which we have virtually full information – the inequalities are still numerous and slightly varying between each system which does not allow for direct comparison.

Other limitations are: my method of systematically accepting data for review (only accepting data that was published after the year 2000, with a few exceptions for publications from 1990) may have excluded valuable information with more concrete correlations between system configurations and health inequalities. There was also no data to be found from my search syntax about prenatal inequalities among native-born people of color in the Netherlands and Norway; all data was separated by immigrant status (and further into Western and non-Western, with some specifics on country of origin), with some mentions of the *children* of non-Western immigrants. On the other hand, the opposite was true for data

from Michigan, with the majority of research into US-born people of color's experience with prenatal care and very little on immigrants. Although there are Indigenous people living in Michigan, the percentage of the population (0.7%) (US Census Bureau, 2019) is very small and therefore may contribute to why there was no data to be found that could be compared with the Sami and Kven populations in Norway. A significant limitation in this study is the severe lack of information in existence on the health of Norwegian Indigenous populations, and even further on prenatal care. I believe this thesis would have benefitted from more information distinguishing the differences in use of midwives in the three states, as use in Norway and the Netherlands is exceedingly common, and public discourse around midwife use is generally extremely positive. Contrastingly, the use of midwives in the United States and Michigan seems to be rare, with more women resorting to an obstetrician/gynecologist for prenatal services. Lastly, including information on parental leave legislation may have also proven beneficial and informative, especially considering the Nordic, other European, and even some non-Western countries are admired for their generous parental leave policies.

Further Research

Recommendations for further research would absolutely be to include more data on the social determinants of health, both their individual and compounded effects. First though, there must be more data collected in the areas that are lacking (Indigenous health, immigrants in Michigan, populations of color born in the Netherlands and Norway). It would also be beneficial if conducting a similar study, to systematically narrow the inputs into health inequalities to a more specific level and find a way to compare these inputs, hopefully generating a method for operationalizing a way to rank systems. Social systems and organizations that exist to provide welfare and generate well-being to inhabitants should definitely be accounted for in further research. Examining inequalities requires a look into infrastructure, societal- and individual-level behavior, and sometimes even a country's historical systems of oppression that result in discriminatory trends today. Details of these divisions of the human experience within individual societies were beyond the scope of this paper, but would add depth and wholeness to future literature.

As has been concluded, the social determinants of health have proven to be essential factors in health outcomes, and with this knowledge a more sufficient way of approaching the inputs into inequalities would be through accounting for a broader, more holistic view of the structures that affect peoples' lives. The contribution of this research is its systematic comparison of health systems in three high-income, developed countries and subsequent

discussion of health inequalities/inequities that can be observed in each country. From this, the only conclusions that could be drawn were that assumptions cannot be made through this type of study about differences in health as a result of these systems, and that other factors play larger roles in contributing to health outcomes than just service accessibility. Thus, this study was able to provide arguments for alternative points of focus that must be considered when performing further research on the topic.

Chapter 6: Conclusion

By analyzing prenatal care offers and inequalities in pregnancy outcomes in three countries with varying systems of health insurance and care provision, this thesis has shown that no conclusion can be drawn about what type of system is most effective at mitigating health inequalities. From the research it has been found that there exist greater factors beyond just health care provision that serve to perpetuate inequities in health, and that these factors must be studied and considered in order to increase our understanding of health inequalities.

It was my assumption that by first analyzing the configurations of health care governance and provision in Norway, the Netherlands, and the United States, followed by mapping specific trends of inequalities and finally providing a discourse on the systemic practices that propagate these inequalities, it would be possible to make a normative deduction about superior system configuration. Even in using a right-to-health lens supported by inequality and inequity theory and positive and negative rights definitions, normative statements couldn't be made regarding how the health systems could function "better". It was my hope to find a guiding framework that other states could model their systems after to better align with the human right to health. Of course the solution cannot be so simple. An approach aimed at reducing negative health outcomes must be comprehensive, integrating other governmental departments that impact the social determinants of health. This research has shown that the persistence of negative health outcomes among Black women in the US, non-Western immigrant women in Norway and the Netherlands, Indigenous populations in Norway, women living in "deprived" neighborhoods in the Netherlands and the US, and low educated women in all three countries appears to be more – or at least equally – affected by issues of public policy, social support, societal discrimination, and systemic oppression than the availability of prenatal care services. This is not to suggest that removing such services would be wise, but to emphasize the necessity of public (and health) policy that accounts for more than simply the services directly connected to population health.

What this thesis contributes to the field is a systematic review of available studies on inequities and inequalities in health and prenatal care outcomes, and a comparison of how these outcomes differ between three varying systems of health insurance and care provision. It analyzes whether certain inequalities are unique to these variations – and finds that essentially, no, they are not – to conclude that inequalities are largely propagated by other societal factors rather than an equal access to health care. To my knowledge, other comparative analyses of pregnancy outcomes in a small number of high-income countries

have not been performed, and therefore the structure of this analysis could serve as a template for similar studies in the future. Some noted limitations are the method of systematically selecting research for analysis, the lack of research on health and prenatal care outcomes among some specific groups, and fact that I was unable to establish a method for rank-comparison of the states.

It is my hope that this research may be referenced to support the importance of inclusive public policy measures that encompass all social determinants of health when seeking to reduce unnecessary, unfair, and avoidable health inequalities.

References

- Agyemang, C., Vrijkotte, T., Droomers, M., Van der Wal, M., Bonsel, G., & Stronks, K. (2009). The effect of neighbourhood income and deprivation on pregnancy outcomes in Amsterdam, The Netherlands (Vol. 63, pp. 755-760, Rep.). *J Epidemiology Community Health*. doi:10.1136/jech.2008.080408
- Artiga, S., & Hinton, E. (2018, May). Beyond Health Care: The Role of Social Determinants in Promoting Health and Health Equity. Retrieved from <https://www.kff.org/disparities-policy/issue-brief/beyond-health-care-the-role-of-social-determinants-in-promoting-health-and-health-equity/>
- Baron, R., Manniën, J., Te Velde, S., Klomp, T., Hutton, E., & Brug, J. (2015). Socio-demographic inequalities across a range of health status indicators and health behaviours among pregnant women in prenatal primary care: A cross-sectional study (Vol. 15, Rep.). *BMC Pregnancy and Childbirth*. doi:10.1186/s12884-015-0676-z
- Bell, J., Zimmerman, F., Almgren, G., Mayer, J., & Huebner, C. (2006). Birth outcomes among urban African-American women: A multilevel analysis of the role of racial residential segregation (Vol. 63, pp. 3030-3045, Rep.). *Social Science & Medicine*. doi:10.1016/j.socscimed.2006.08.011
- Blank, R. H., Burau, V. D., & Kuhlmann, E. (2018). Comparative health policy(5th ed.). London: Macmillan Education.
- Bærug, A., Laake, P., Fossum Løland, B., Tylleskär, T., Tufte, E., & Fretheim, A. (2017). Explaining socioeconomic inequalities in exclusive breast feeding in Norway (Vol. 102, pp. 708-714, Rep.). *Archives of Disease in Childhood*. <http://dx.doi.org/10.1136/archdischild-2016-312038>
- Castree, N., Kitchin, R., & Rogers, A. (2013). Normative Theory. *Oxford Dictionary of human geography*. Oxford: Oxford University Press.
- Centers for Disease Control and Prevention (CDC). (2019-a, January 20). FastStats - Births and Natality. Retrieved June 17, 2020, from <https://www.cdc.gov/nchs/fastats/births.htm>

Centers for Disease Control and Prevention (CDC). (2019-b, September). Racial and Ethnic Disparities Continue in Pregnancy-Related Deaths. Retrieved June 25, 2020, from <https://www.cdc.gov/media/releases/2019/p0905-racial-ethnic-disparities-pregnancy-deaths.html>

Choté, A., Koopmans, G., Redekop, W., de Groot, C., Hoefman, R., Jaddoe, V., Hofman, A., Steegers, E., Mackenbach, J., Trappenburg, M., & Foets, M. (2011). Explaining Ethnic Differences in Late Antenatal Care Entry by Predisposing, Enabling and Need Factors in the Netherlands. The Generation R Study (Vol. 15, pp. 689-699, Rep.). *Maternal Child Health*. doi:10.1007/s10995-010-0619-2

Collins, J., Jr., & David, R. (2009). Racial Disparity in Low Birth Weight and Infant Mortality (1st ed., Vol. 36, pp. 63-73, Rep.). *Clinics in Perinatology*. doi:10.1016/j.clp.2008.09.004

Commonwealth Fund. (2020). Uninsured adults. *The Commonwealth Fund*. Retrieved from <https://datacenter.commonwealthfund.org/topics/uninsured-adults>

Copper, R., Goldenberg, R., Das, A., Elder, N., Swain, M., Norman, G., Ramsey, R., Cotroneo, P., Collins, B., Johnson, F., Jones, P., & Meier, A. (1996). The preterm prediction study: Maternal stress is associated with spontaneous preterm birth at less than thirty-five weeks' gestation (5th ed., Vol. 175, pp. 1286-1292, Rep.). *American Journal of Obstetrics and Gynecology*. Retrieved from [https://doi.org/10.1016/S0002-9378\(96\)70042-X](https://doi.org/10.1016/S0002-9378(96)70042-X).

Currey, B. (2000). Maternal Mortality and Mothers' Deaths as Development Indicators (Vol. 321, p. 835, Rep.). *The BMJ*.

Daniels, N. (2007), *Just Health: Meeting Health Needs Fairly*. Cambridge: Cambridge University Press. doi: [10.1017/CBO9780511809514](https://doi.org/10.1017/CBO9780511809514)

De Graaf, J., Ravelli, A., de Haan, M., Steegers, E., & Bonnel, G. (2013). Living in deprived urban districts increases perinatal health inequalities (5th ed., Vol. 26, pp. 473-481, Rep.). *The Journal of Maternal-Fetal & Neonatal Medicine*. doi:10.3109/14767058.2012.735722

- DeMichele, T., Bastian, C., Georgen, E., & Mullen, P. (2019, March). Obamacare Preventive Care (L. DeSolla Price, Ed.). Retrieved June 20, 2020, from <https://obamacarefacts.com/obamacare-preventive-care/>
- Downe, S., Finlayson, K., Tunçalp, Ö., & Metin Gülmezoglu, A. (2015). What matters to women: a systematic scoping review to identify the processes and outcomes of antenatal care provision that are important to health pregnant women. *BJOG, An International Journal of Obstetrics and Gynaecology*, 123(4), 529-539. [//dx.doi.org/10.1111/1471-0528.13819](https://doi.org/10.1111/1471-0528.13819)
- Elo, I., Culhane, J., Kohler, I., O'Campo, P., Burke, J., Messer, L., Kaufman, J., Laraia, B., Eyster, J., & Holzman, C. (2008). Neighbourhood deprivation and small-for-gestational-age term births in the United States (Vol. 23, pp. 87-96, Rep.). *Paediatric and Perinatal Epidemiology*. doi:10.1111/j.1365-3016.2008.00991.x
- El-Sayed, A., & Galea, S. (2012). Prenatal Care and Risk of Preterm Birth Among Foreign and US-Born Mothers in Michigan (Vol. 14, pp. 230-235, Rep.). *J Immigrant Minority Health*. doi:10.1007/s10903-011-9458-5
- Geronimus, A. (1996). Black/white differences in the relationship of maternal age to birthweight: A population-based test of the weathering hypothesis (2nd ed., Vol. 42, pp. 589-597, Rep.). *Social Science & Medicine*. Retrieved from [https://doi.org/10.1016/0277-9536\(95\)00159-X](https://doi.org/10.1016/0277-9536(95)00159-X).
- Gifford, K., Walls, J., Ranji, U., Salganicoff, A., & Gomez, I. (2017, April). Medicaid Coverage of Pregnancy and Perinatal Benefits. Retrieved from <http://files.kff.org/attachment/Report-Medicaid-Coverage-of-Pregnancy-and-Perinatal-Benefits>
- Grady, S., & Darden, J. (2012). Spatial Methods to Study Local Racial Residential Segregation and Infant Health in Detroit, Michigan (5th ed., Vol. 102, pp. 922-931, Rep.). *Annals of the Association of American Geographers*. doi:10.1080/00045608.2012.674898

- Grøtvedt, L., Grimstvedt Kvalvik, L., Grøholt, E., Akerkar, R., & Egeland, G. (2017). Development of Social and Demographic Differences in Maternal Smoking Between 1999 and 2014 in Norway (5th ed., Vol. 19, pp. 539-546, Rep.). *Society for Research on Nicotine and Tobacco*. doi:10.1093/ntr/ntw313
- Healthcare for Internationals. (n.d.). Legal framework. Retrieved June 10, 2020, from <https://h4i.nl/healthcare-in-nl/legal-framework/>
- Healthcare.gov(a). (n.d.) Health coverage exemptions: Forms & how to apply. Retrieved from <https://www.healthcare.gov/health-coverage-exemptions/exemptions-from-the-fee/>
- Healthcare.gov(b). (n.d.) Preventive care benefits for women. Retrieved from <https://www.healthcare.gov/preventive-care-women/>
- Hinton, E., Musumeci, M., Rudowitz, R., Antonisse, L., & Hall, C. (2019) *Section 1115 Medicaid Demonstration Waivers: the current landscape of approved and pending waivers*. Retrieved from <https://www.kff.org/medicaid/issue-brief/section-1115-medicare-demonstration-waivers-the-current-landscape-of-approved-and-pending-waivers/>
- HHS Poverty Guidelines for 2020, (2020). HHS Poverty Guidelines for 2020. Retrieved June 15, 2020 from <https://aspe.hhs.gov/poverty-guidelines>
- Kaiser Family Foundation. (2019). Births financed by Medicaid. Retrieved June 21, 2020, from <https://www.kff.org/medicaid/state-indicator/births-financed-by-medicare/>
- Kaiser Family Foundation. (2020-a). Health Insurance Coverage of Children 0-18. Retrieved June 7, 2020, from <https://www.kff.org/other/state-indicator/adults-19-64/?currentTimeframe=0>
- Kaiser Family Foundation. (2020-b). Medicaid/CHIP Upper Income Eligibility Limits for Children, 2000-2020. Retrieved June 19, 2020, from <https://www.kff.org/medicaid/state-indicator/medicarechip-upper-income-eligibility-limits-for-children/>

- Kaiser Family Foundation. (2020-c). Status of State Action on the Medicaid Expansion Decision. Retrieved June 10, 2020, from <https://www.kff.org/health-reform/state-indicator/state-activity-around-expanding-medicaid-under-the-affordable-care-act/>
- Kinge, J., & Kornstad, T. (2014). Assimilation effects on infant mortality among immigrants in Norway: Does maternal source country matter? (26th ed., Vol. 31, pp. 779-812, Rep.). *Demographic Research*. doi:10.4054/DemRes.2014.31.26
- Kroneman, M., Boerma, W., van den Berg, M., Groenewegen, P., de Jong, J., & van Ginneken, E. (2016). The Netherlands: health system review. *Health Systems in Transition*, 2016; 18(2):1–239.
- Lenert Hansen, K., Melhus, M., & Lund, E. (2010). Ethnicity, self-reported health, discrimination and socio-economic status: A study of Sami and non- Sami Norwegian populations (2nd ed., Vol. 69, pp. 111-128, Rep.). *International Journal of Circumpolar Health*. doi:10.3402/ijch.v69i2.17438
- Michigan Department of Health and Human Services (MDHHS). (2020). Medicaid. Retrieved June 8, 2020, from https://www.michigan.gov/mdhhs/0,5885,7-339-71547_4860_78446_78447_78454-407318--,00.html
- Ministry of Health and Care Services. (2007). National strategy to reduce social inequalities in health (20th ed., pp. 1-99, Rep.). Norwegian Ministry of Health and Care Services.
- Ministry of Health, Welfare and Sport. (2018). *Healthcare in the Netherlands* (pp. 1-28) (The Netherlands, Ministry of Health, Welfare and Sport). The Hague: The Royal Dutch Ministry of Health, Welfare and Sport.
- Mortensen, L. H., Diderichsen, F., Arntzen, A., Gissler, M., Cnattingius, S., Schnor, O., Davey-Smith, G., & Nybo Andersen, A. M. (2008). Social inequality in fetal growth: a comparative study of Denmark, Finland, Norway and Sweden in the period 1981-2000. *Journal of epidemiology and community health*, 62(4), 325–331. <https://doi.org/10.1136/jech.2007.061473>

Naimy, Z., Grytten, J., Monkerud, L., & Eskild, A. (2013). Perinatal mortality in non-western migrants in Norway as compared to their countries of birth and to Norwegian women (37th ed., Vol. 13, pp. 1-8, Rep.). *BMC Public Health*. Retrieved from <http://www.biomedcentral.com/1471-2458/13/37>

National Institute of Child Health and Human Development (NICHD). (n.d.). About Pregnancy. Retrieved from <https://www.nichd.nih.gov/health/topics/pregnancy/conditioninfo>

Norwegian Institute of Public Health. (2018a, May 14). Helse i innvandrerbefolkningen. Retrieved June 22, 2020, from <https://www.fhi.no/nettpub/hin/grupper/helse-i-innvandrerbefolkningen/#mor-og-barns-helse>

Norwegian Institute of Public Health. (2018b, October 15). Social inequalities in health. Retrieved June 23, 2020, from <https://www.fhi.no/en/op/hin/groups/social-inequalities/>

NVOG, KNOV, NHG, Erfocentrum, CPZ, RIVM, & K&Z. (2019). Pregnant! [Pamphlet]. *The Dutch National Institute for Public Health and the Environment*.

O'Campo, P., Burke, J., Culhane, J., Elo, I., Eyster, J., Holzman, C., Messer, L., Kaufman, J., & Laraia, B. (2007). Neighborhood Deprivation and Preterm Birth among Non-Hispanic Black and White Women in Eight Geographic Areas in the United States (2nd ed., Vol. 167, pp. 155-163, Rep.). *American Journal of Epidemiology*. doi:10.1093/aje/kwm277

Parker, J., Schoendorf, K., & Kiely, J. (1994). Associations between measures of socioeconomic status and low birth weight small for gestational age, and premature delivery in the United States (Vol. 4, pp. 271-278, Rep.). *Annals of Epidemiology*. doi:10.1016/1047-2797(94)90082-5

Petersen, C., Mortensen, L., Morgen, C., Madsen, M., Schnor, O., Arntzen, A-M., Nybo Andersen, A. (2009). Socio-economic inequality in preterm birth: A comparative study of the Nordic countries from 1981 to 2000 (Vol. 23, pp. 66-75, Publication). *Paediatric and Perinatal Epidemiology*. Retrieved June 21, 2020.

- Pickett, K., Collins, J., Jr., Masi, C., & Wilkinson, R. (2005). The effects of racial density and income incongruity on pregnancy outcomes (Vol. 60, pp. 2229-2238, Rep.). *Social Science & Medicine*. Retrieved from <https://doi.org/10.1016/j.socscimed.2004.10.023>.
- Poeran, J., Maas, A., Birnie, E., Denktas, S., Steegers, E., & Bonsel, G. (2013). Social deprivation and adverse perinatal outcomes among Western and non-Western pregnant women in a Dutch urban population (Vol. 83, pp. 42-49, Rep.). *Social Science & Medicine*. doi:10.1016/j.socscimed.2013.02.008
- Posthumus, AG., Schölerich, VLN., Steegers, EAP., Kawachi, I., Denktas, S., (2015) The Association of Ethnic Minority Density with Late Entry into Antenatal Care in the Netherlands. *PLoS ONE*. doi:10.1371/journal.pone.0122720
- Rice T, Rosenau P, Unruh LY, Barnes AJ, Saltman RB, van Ginneken E. United States of America: Health system review. *Health Systems in Transition*, 2013; 15(3): 1–431.
- Ringard Å, Sagan A, Sperre Saunes I, Lindahl AK. Norway: Health system review. *Health Systems in Transition*, 2013; 15(8): 1–162.
- Rom, A., Mortensen, L., Cnattingius, S., Arntzen, A., Gissler, M., & Nybo Andersen, A. (2009). A comparative study of educational inequality in the risk of stillbirth in Denmark, Finland, Norway and Sweden 1981e2000 (Vol. 66, pp. 240-246, Rep.). *J Epidemiol Community Health*. doi:10.1136/jech.2009.101188
- Silva, L., Jansen, P., Steegers, E., Jaddoe, V., Arends, L., Tiemeier, H., Verhulst, F., Moll, H., Hofman, A., Mackenbach, J., & Raat, H. (2010). Mother's educational level and fetal growth: The genesis of health inequalities (Vol. 39, pp. 1250-1261, Rep.). *International Journal of Epidemiology*. doi:10.1093/ije/dyq069
- Sitras, V., & Nordeng, H., (2020, February 17). Vaksinasjon i Svangerskap og Ammeperiode. Retrieved on May 15, 2020 from <https://www.legeforeningen.no/foreningsledd/fagmed/norsk-gyneologisk-forening/veiledere/ny-veileder-i-fodselshjelp-hoering/vaksinasjon-i-svangerskap-og-ammeperiode/>

- Sperre Saunes, I., Karanikolos, M., & Sagan, A. (2020). Health systems in transition: Norway 22(1). Copenhagen: *European Observatory on Health Systems and Policies*.
- Sreenivasan, G. (2018). Justice, Inequality, and Health. *The Stanford Encyclopedia of Philosophy*, Edward N. Zalta (ed.), Retrieved from <https://plato.stanford.edu/archives/fall2018/entries/justice-inequality-health/>
- Statistics Netherlands (CBS). (2019, August 6). Figures - Population 2018. Retrieved June 17, 2020, from <https://longreads.cbs.nl/trends19-eng/society/figures/population/>
- Statistisk Sentralbyrå (SSB). (2020, March). Births. Retrieved June 17, 2020, from <https://www.ssb.no/en/fodte>
- Statistisk Sentralbyrå. (n.d.). Population. Retrieved June 25, 2020, from <https://www.ssb.no/en/befolkning>
- State of Michigan Dept. of Insurance and Financial Services. (2017). Michigan Consumer Guide to Health Insurance. Retrieved from https://www.michigan.gov/documents/lara/MI_Consumer_Guide_to_Health_Insurance_401745_7.pdf
- Stirbu, I., Kunst, A., & Mackenbach, J. (2006). Differences in avoidable mortality between migrants and the native Dutch in the Netherlands (78th ed., Vol. 6, pp. 1-10, Rep.). Rotterdam: *BMC Public Health*. doi:10.1186/1471-2458-6-78
- Tikkanen, R., Osborn, R., Mossialos, E., Djordjevic, A., & Wharton, G. (2020). International health care system profiles: United States. *The Commonwealth Fund*. Retrieved from <https://www.commonwealthfund.org/international-health-policy-center/countries/united-states>
- Timmermans, S., Bonsel, G., Steegers-Theunissen, R., Mackenbach, J., Steyerberg, E., Raat, H., Verbrugh, H., Tiemeier, H., Hofman, A., Birnie, E., Looman, C., Jaddoe, V., & Steegers, E. (2011). Individual accumulation of heterogeneous risks explains perinatal inequalities within deprived neighbourhoods (Vol. 26, pp. 165-180, Rep.). *European Journal of Epidemiology*. doi:10.1007/s10654-010-9542-5

- UN Economic and Social Council. (2000). *General Comment No. 14: The Right to the Highest Attainable Standard of Health (Art. 12)* (pp. 1–21). New York, New York: UN Committee on Economic, Social and Cultural Rights (CESCR).
- UNESCO. (2013). *Education for All Global Monitoring Report* (pp. 1-28, Issue brief No. ED.2013/WS/25). UNESCO. Retrieved 2020, from <https://unesdoc.unesco.org/ark:/48223/pf0000223115>.
- US Census Bureau. (2019). QuickFacts Michigan. Retrieved June 25, 2020, from <https://www.census.gov/quickfacts/MI#qf-headnote-a>
- US Census Bureau. (2020, February 13). Population and Housing Unit Estimates Datasets. Retrieved June 17, 2020, from <https://www.census.gov/programs-surveys/popest/data/data-sets.2018.html>
- Vos, A., Denktas, S., Borsboom, G., Bonsel, G., & Steegers, E. (2015). Differences in perinatal morbidity and mortality on the neighbourhood level in Dutch municipalities: A population based cohort study (Rep.). *BMC Pregnancy and Childbirth*. doi:10.1186/s12884-015-0628-7
- Wammes, J., Jeurissen, P., Westert, G., & Tanke, M. (2017). International Health Care System Profiles. Retrieved May 25, 2020, from <https://international.commonwealthfund.org/countries/netherlands/>
- Welfare state. (n.d.) In *Merriam-Webster's collegiate dictionary*. Retrieved from <https://www.merriam-webster.com/dictionary/welfare%20state>
- WHO. (2016). WHO recommendations on antenatal care for a positive pregnancy experience (pp. 1-152). Geneva, Switzerland: *World Health Organization*.
- WHO. (2017, April). 10 facts on health inequities and their causes. Retrieved from https://www.who.int/features/factfiles/health_inequities/en/
- WHO. (2019). ICD-10 online versions. Retrieved June 17, 2020, from <https://www.who.int/classifications/icd/icdonlineversions/en/>

WHO. (2020). Constitution of the World Health Organization. In *Basic Documents: (49th ed., including amendments adopted up to 31 May 2019, (pp. 1-19). Geneva, Switzerland: World Health Organization.*

Zondag, L., Cadée, F., & de Geus, M. Midwifery in the Netherlands, Midwifery in the Netherlands 1–16 (2017). Utrecht, Netherlands: *The Royal Dutch Association of Midwives (KNOV)*. Retrieved from knov.nl

Zorginstituut Nederland. (n.d.-a). Deductible. Retrieved June 20, 2020, from <https://www.zorginstituutnederland.nl/Verzekerde+zorg/eigen-risico-zvw>

Zorginstituut Nederland. (n.d.-b). Maternity care. Retrieved June 20, 2020, from <https://www.zorginstituutnederland.nl/Verzekerde+zorg/kraamzorg-zvw>

Zorginstituut Nederland. (n.d.-c). Midwifery care. Retrieved June 20, 2020, from <https://www.zorginstituutnederland.nl/Verzekerde+zorg/verloskundige-zorg-zvw>

Zorgverzekeringslijn.nl. (n.d.). Health insurance. Retrieved June 20, 2020, from <https://www.zorgverzekeringslijn.nl/jouw-situatie/zorgverzekering/eigen-risico/wat-is-het-wettelijk-verplichte-eigen-risico/>

Zwart, J., Jonkers, M., Richters, A., Öry, F., Bloemenkamp, K., Duvekot, J., & Van Roosmalen, J. (2010). Ethnic disparity in severe acute maternal morbidity: A nationwide cohort study in the Netherlands (2nd ed., Vol. 21, pp. 229-234, Rep.). *European Journal of Public Health*. doi:10.1093/eurpub/ckq046