

3

Midwifery: Clients, Context, and Care

JYESHA WREN SERBIN, SIMON ADRIANE ELLIS, ELIZABETH DONNELLY, AND KIM Q. DAU WITH BETTY JANE WATTS CARRINGTON, HEATHER CLARKE, CAROLYN CURTIS, NICOLLE L. GONZALES, PATRICIA O. LOFTMAN, FELINA M. ORTIZ, M. SUSAN STEMMLER, AND KARLINE WILSON-MITCHELL

The editors acknowledge Jan M. Kriebs for contributions to this chapter.

“A person’s ability to choose wisely is harmed when their provider does not distinguish between personal beliefs and professional actions.”

—Jan M. Kriebs

“If you have come to help me, you are wasting your time. But if you have come because your liberation is bound up with mine, then let us walk together...”

—Lila Watson, Australian Aboriginal woman, in response to mission workers

Introduction

An individual’s health is influenced by five factors: genetics (30%), behavioral patterns (40%), social circumstances (15%), health care (10%), and environmental exposures (5%).^{1,2} Behavioral patterns and environmental exposures are inexorably linked to social circumstances. It is now well known that social determinants of health (SDOH) have a significant impact on health, and that SDOH have the largest impact on health inequities.¹⁻⁵ Yet, worldwide, multiple social, political economic, and environmental inequities continue to contribute to significant health disparities, including preventable morbidity and mortality.^{3,4}

Healthcare services can improve the health of individuals only when certain conditions are met. First, the individual must have access to healthcare services. Second, the care offered must be of good quality and based on evidence. Healthcare services are likely to be ineffective if the nonbiologic factors that affect access to and quality of care are not addressed. This chapter introduces key concepts that provide the foundation for understanding health disparities, including root causes and the roles

that midwives play in mitigating health disparities. Midwifery is inherently a public health-oriented profession, and midwives have a fiduciary responsibility to seek ongoing education about these topics and application of this body of knowledge in each and every healthcare encounter.

The topics presented in this chapter include some exemplars of well-known disparities in health care. Although this chapter addresses just a few of the SDOH, this content can serve as a platform—a foundation—to help midwives identify which learning is needed to provide quality healthcare services to persons from all cultures and populations.

The first section introduces the concepts of power, privilege, and bias that affect every healthcare interaction. The second section explores the concepts of social structure and power that create SDOH inequities. Subsequent sections provide an overview of healthcare disparities and review several populations in the United States whose health is most impacted by inequity. The final sections describe the techniques used by individual midwives and the midwifery profession as a whole to address health disparities. Finally, population-based health statistics are internationally recognized as indicators of a nation’s health and widely

used to identify and track trends in the health status of populations. An understanding of reproductive health statistics is essential for all midwives, as these data frequently guide practice. **Appendix 3A** reviews definitions of key reproductive health statistics and explains how they are used and interpreted.

One more important caveat must be discussed before delving into the main chapter content. Language is an evolution and journey of its own, and the language used in this chapter and text is deliberately inconsistent. The term “persons of color” is used in this chapter as an umbrella term that refers to all persons who are not identified by society as white. It can be helpful to consider non-white persons together when looking at the effects of racism. However, important aspects of a person’s racial, ethnic, and cultural identity can be muted when many different cultures are grouped together under one umbrella, and this is a cautionary point the reader is asked to bear in mind. Additionally, both the terms “African American” and “black” are intentionally used throughout the text to recognize that labeling persons within this social construct is challenging and imperfect. This chapter also aims to use gender-neutral language. Due to the great diversity of gender identities, actively evolving norms about how to discuss gender on a population level, and the frequent lack of data that disaggregate the multitude of gender identities, the terms “woman” and “women” are used throughout this textbook without clarifying qualifiers. Language that refers to gender is not perfect, of course, so the reader is asked to consider the text with a critical eye and an awareness that while humans must be referred to with a word or phrase, those labels are never a comprehensive or totally accurate definition for any individual.

Social Structure: Power, Privilege, and Bias

“Society” is one of the most influential contexts within which individuals and communities exist. “Society”—that is, the organized pattern of relationships and interactions within a population—incorporates deeply embedded categories that affect each of us. These socially constructed categories and classifications reinforce hierarchical relationships between identities, such as gender, race, ethnicity, sexual orientation, socioeconomic status, religion, nationality, and immigration status. The existence of a social hierarchy privileges some identities as having implied and/or explicit power in relationship to oppressed identities.

Power is the ability to direct or influence the behavior of others, oneself, or a course of events; *privilege* exists when power unfairly advantages persons in some social

categories versus others. Persons who identify with the socially dominant categories in **Table 3-1** have more privileges than do persons in the socially oppressed categories; similarly, persons in socially oppressed categories can be discriminated against or treated differently based solely on their “minority status.”

An individual’s social location is composed of multiple social identities and the interactions between them (e.g., race, ethnicity, gender, class, sexual orientation, age, disability/ability, migration status, religion). The individual experience of this multilayered existence reflects the intersection of privilege and oppression at the social-structural level. Collectively, this framework is known as *intersectionality*.^{6,7}

Societal privileges and discriminations grant variable and inequitable access to social, political, and economic resources, such as wages, high-quality education, safe housing and communities, and comprehensive health care. Structural, institutional, and interpersonal discrimination, in turn, contribute to health inequities. Health and health care are affected by power and privilege in society, such that individuals who experience socially dominant identities tend to have better health outcomes.

Healthcare Provider Bias

One of the ways that social hierarchy influences midwifery care is through healthcare provider bias. The social hierarchy shapes our unconscious and conscious beliefs about dominant and oppressed groups. These beliefs are referred to as *bias*, which is favor toward or prejudice against a certain person, group, or thing, typically without merit.

Bias reinforces social hierarchies, and it can result in unequal access to healthcare services and unequal rendering of quality care. This divergence often happens because there is a significant disparity between healthcare providers’ *beliefs* and *actions* when interacting with individuals from social identities different than their own. Providers usually value fairness and justice, yet they may exhibit biases to the same extent as the general population and not offer equal care to all people.⁸⁻¹⁰ Therefore, the ways in which healthcare providers perpetrate health inequities requires an examination of bias, and specifically implicit bias.

Implicit Bias in Healthcare Providers

Implicit bias is the process by which unconscious attitudes create preferences and assumptions, thereby shaping one’s interactions with others and influencing behavior “without the conscious intention of the agent.”⁸ A provider may have few explicit biases but a high level of implicit biases. This concept explains

Table 3-1 Selected Categories That Are Determined by the Social Hierarchy^a

Category	Socially Dominant	Socially Oppressed
Gender	Cisgender male	Cisgender female, transgender, nonbinary and gender-nonconforming individuals
Race	White	People of color
Socioeconomic status	Middle and upper class	Poor, working class
Nation	Global North (including the United States)	Global South
Ethnicity	European	All other ethnicities
Sexual orientation	Heterosexual	Lesbian, gay, bisexual, queer, asexual
Religion	Christian	All other religions
Ability/disability	Able-bodies	Persons with disabilities (e.g., physical, mental, learning)
Age	Youth	Elderly people
Immigration status	Citizens	Undocumented persons, individuals with insecure documentation status, refugees, migrant workers, asylum seekers
Body size	Persons with BMI in the range 19–25 mm/kg ²	People with BMI < 19 mm/kg ² or > 25 mm/kg ²
Language	English	All other languages

Abbreviation: BMI, body mass index.

^a This table presents some examples of well-known social hierarchical identities that affect individuals. It is not intended to be a definitive guide to all forms of hierarchy.

the contradiction between healthcare providers’ beliefs and actions. In essence, implicit bias results in an unintentional contradiction between the conscious desire to provide equal evidence-based care and the actual clinical decision making that occurs.¹¹ Multiple studies and systematic reviews have found that *implicit racial bias* adversely affects provider–client interactions, treatment decisions, treatment adherence, and healthcare outcomes.^{12–14} Groups more likely to receive disparate care secondary to implicit bias are those identified in Table 3-1 as socially oppressed.

Implicit bias is difficult to address because it is unconscious. Factors such as provider stress and fatigue may increase the likelihood of the provider engaging in biased behaviors. A high cognitive load activates implicit biases in an unconscious attempt to categorize data quickly. In settings where midwives are expected to see a high volume of individuals in very short time slots, institutional approaches are needed to reduce cognitive demands, as a first step toward minimizing implicit biases.⁸

Reducing the interpersonal discrimination that results from implicit bias requires both ongoing individual examination and conscious de-biasing.¹⁵

Recognizing the existence of one’s implicit biases is a useful starting point, but ongoing self-education about the nature of bias and triggers that evoke the biases is key to minimizing the adverse effects of implicit bias.¹⁵ Online resources that help midwives identify implicit bias are listed in the Resources section at the end of this chapter.

Social Determinants of Health and Health Disparities

Over the last two decades, public health, medical, and nursing researchers have made significant advances in elucidating the effects of historical, social, political, and socioeconomic factors on individual and population health. As noted earlier, *social determinants of health* is the term widely used to describe these factors. SDOH comprise the wide range of factors that impact health but that have not historically been under the purview of clinical care (Figure 3-1).^{16,17} The Centers for Disease Control and Prevention (CDC) defines SDOH as “conditions in the environments in which people are born, live, learn, work, play, worship, and age.”⁴ These factors can either promote good health

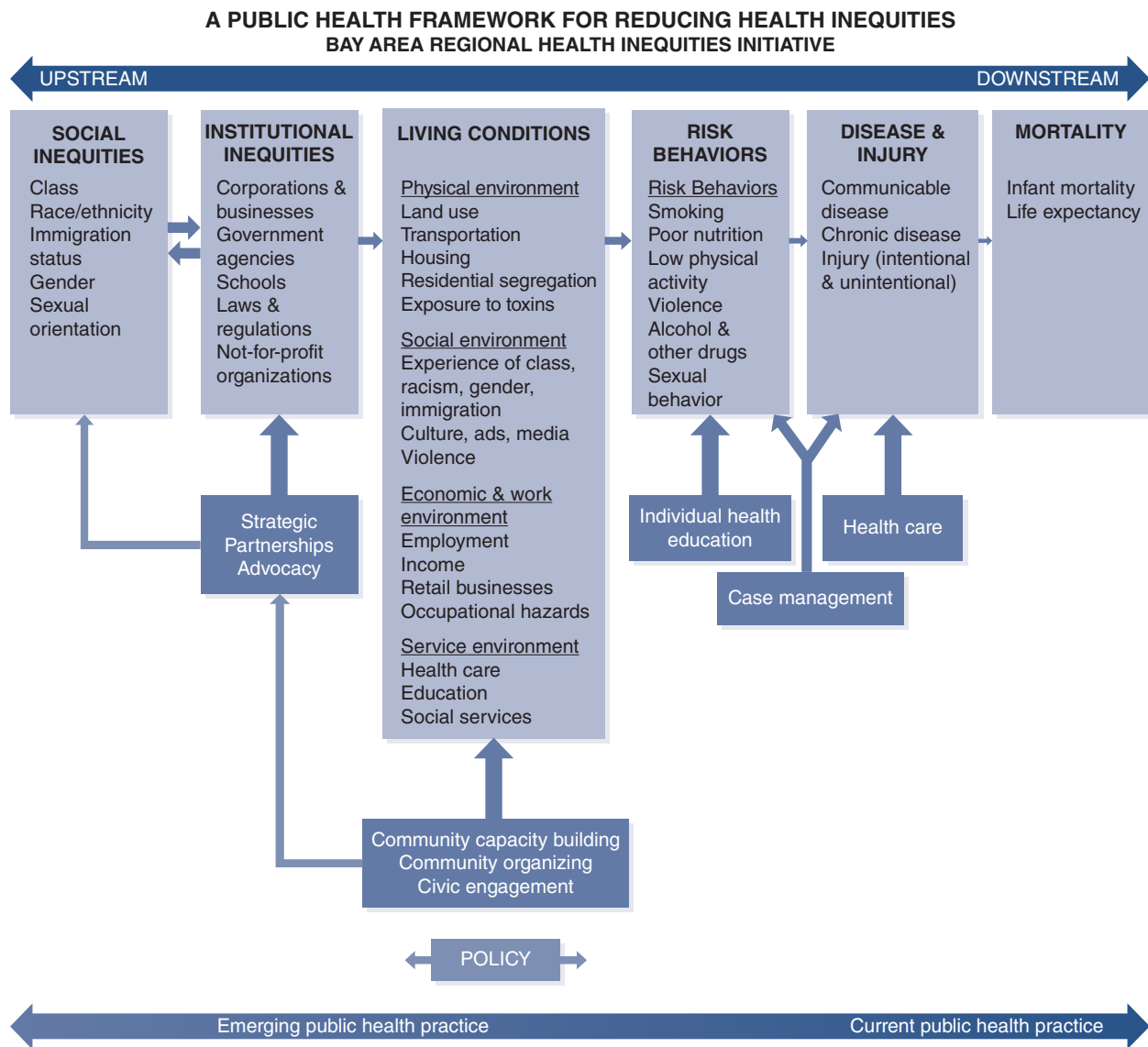


Figure 3-1 Public health framework for reducing health inequities.

Reproduced with permission from Bay Area Regional Health Inequities Initiative. Available at: <http://barhii.org/framework/>. Accessed January 16, 2018.¹⁶

or contribute to poor health. Research about SDOH has demonstrated that unequal distribution of power, money, and resources underlies the differences that contribute to disparities in health outcomes.³ Because these forces are social, political, cultural, and economic in nature, clinical care alone cannot address the causes of these disparities. Attention to equity and justice in policy, structure, and culture change are required to address and eliminate these inequities.

Midwives have a long history of recognizing and addressing social determinants of health. Long before the term was coined, midwives worked as general healers within their communities, with their services encompassing a public health and preventive health

perspective. For example, grand midwives in the American South, such as Onnie Lee Logan, brought food and social support in addition to clinical care for their clients, who were living in poverty.¹⁷ Frontier midwives, such as Mary Breckinridge, encouraged the building of sanitary toilets and chlorinating infected wells to improve the health of families.¹⁸ Sanba midwives in the American West, such as Toku Tosiko, offered culturally and linguistically competent care to the Japanese immigrant community, serving as cultural brokers as well as healthcare providers.¹⁹

The commitment to recognize and address social determinants of health continues today, as a foundational precept of midwifery practice. Contemporary

examples include midwives who are involved in maternity care models designed to address race-based health disparities,²⁰ environmental research and activism addressing high levels of environmental toxins found in breast milk in Mohawk communities,²¹ and new models of care such as CenteringPregnancy in which women and families establish social support networks that support optimal health outcomes as they share the journey of pregnancy and parenting.^{22,23}

Braveman describes four common mechanisms of action by which SDOH affects health outcomes:⁵

- *Direct, rapid-acting exposures* are specific insults that cause direct, immediate mental and/or physical health consequences for the individual. For example, children raised in substandard housing with chronic exposure to lead in the home or water source can develop long-term cognitive disabilities.
- *Indirect, rapid-acting exposures* are exposures to insults that are immediate but indirectly contribute to adverse mental and/or physical health. For example, the availability of alcohol in a community increases the likelihood of alcohol-related trauma.
- *Indirect impact on health behaviors* comprises exposures to insults that indirectly impact current or future health behaviors. For example, “food deserts”—that is, areas with minimal access to fresh produce and high concentrations of fast-food options—are associated with poor nutrition that, decades later, may result in chronic disease.²⁴
- *Complex and long causal pathways* are chronic exposures to social and environmental stressors, including discrimination, that lead to biological “wear and tear.” These long-duration causal pathways may take place over a lifetime and/or persist from generation to generation. For example, Geronimus’s “*weathering*” theory describes how repeated biological adaptations to chronic stress create physiologic burden (allostatic load) and lead to premature aging and morbidity, with the highest rates found among black women.²⁵

Stress, Allostasis, and Epigenetic Mechanisms

The biologic mechanisms by which chronic stress mediates the relationship between SDOH and adverse health outcomes have been the subject of a great deal of research at both the individual and population levels. *Allostasis* refers to the body’s dynamic responses to stress that work to maintain homeostasis.²⁶ When a person experiences chronic stress, the physiologic

mediators of allostasis such as cortisol induce adverse effects such as diminished immune response or development of atherosclerosis. This is the mechanism by which chronic stress and high levels of stress adversely affect health through *weathering*.²⁷ Chronic stress or allostatic load can also induce epigenetic changes. *Epigenetic modifications* refer to DNA methylation, histone modifications, and noncoding RNAs that are the body’s response to trauma. Cellular evidence such as shortening of telomere length, which is associated with shortened lifespan, is seen more frequently in persons exposed to chronic stress or discrimination.²⁸

Epigenetic changes act as mediators of future adverse health. For example, epigenetic modifications may explain the biologic manifestations of *historical trauma*, referring to the cumulative emotional and psychological damage that occurs over the lifespan and across generations following massive group experiences.²⁹ Epigenetics and historical trauma may also be partially responsible for the finding that black women have higher rates of preterm birth and higher rates of infant mortality than do white women with similar demographic characteristics.³⁰⁻³² In individuals, epigenetic changes may explain some of the findings that link prenatal or early childhood exposures with adverse health outcomes in adulthood.^{27,30-32}

Life-Course Perspective

The response to stressors is highly variable among individuals, so another concept is needed to help midwives understand how these processes affect the health of individuals. The “life-course perspective” has been widely adopted by public health and maternal–child health advocates as a framework for understanding the interplay of SDOH and protective factors on health status.³² This framework incorporates toxic environmental exposures, nutrition, stress, and health behaviors as environmental influences on biology, including fetal origins of adult disease. Most importantly, the life-course perspective incorporates the protective factors that individuals and communities employ in resistance to environmental risk factors, including resilience, social support, self-esteem, and self-efficacy. The *developmental origins of health and disease* (DOHaD) framework is a rapidly growing body of knowledge that encompasses the theories of allostasis, epigenetics, weathering, and life-course perspective to explore individual and multigenerational effects of prenatal stressors.^{26-28,30-33}

Health Disparities

Health disparities are differences in health outcomes and the determinants of those outcomes between groups within a population, as defined by social, demographic, environmental, and geographic attributes.³⁴ Health

disparities occur because unequal access to resources results in worse health outcomes for disenfranchised groups. In essence, health disparities are the downstream effect of social determinants of health. The following sections present an overview of some prominent well-documented health disparities that affect clients of midwifery care. Health disparities are not natural or inevitable, but rather are socially constructed—so they can be eliminated through social change.

Socioeconomic Status

Socioeconomic status (SES) is the term used to describe the social location of an individual, or population, with respect to that person's or population's access to money and resources. Markers frequently used to assess SES include wealth, income, profession, and educational attainment. SES cannot be adequately represented by income level alone, however, because income typically fluctuates significantly over the course of an individual's lifetime. Additionally, SES at specific moments over the life course may have more or less impact; for example, some evidence suggests that childhood SES impacts adult health independent of adult SES.³⁵

Socioeconomic status is difficult to quantify because multiple factors influence its effects. For example, abundant evidence shows that the general SES in a neighborhood is correlated with health outcomes independent of individual SES.³⁶ Low-SES neighborhoods tend to have a cluster of social and politically mediated structural disadvantages that impact both acute and long-term health, such as lack of access to high-quality food sources, increased exposure to environmental toxins, lower-quality education and housing options, and poor access to public transit.³⁶

Despite the difficulties inherent in accurately assessing SES, a significant body of evidence indicates that SES is correlated with health, and that this effect is dose-dependent. As a consequence, populations with low SES tend to have poor health outcomes, middle-SES populations tend to have average health outcomes, and high-SES populations tend to have the best health outcomes.^{3,36,37}

Racial Disparities

The United States faces a crisis related to the ubiquitous and persistent race-based disparities in health for all persons including maternal–child health. Racial differences in health status and prevalence of illness are not due to genetic differences between racial groups. In fact, there are no specific genetic characteristics

that differentiate one “race” from another, and there is just as much genetic diversity within racial groups as there is between them.³⁸ A person's race does not provide substantive biological information about that individual, nor does it provide an account of the ancestry or culture of the individual. As Dr. Camara Jones, president of the American Public Health Association, has noted, “the variable ‘race’ is not a biological construct that reflects innate differences, but a social construct that precisely captures the impacts of racism.”³⁹ Nevertheless, racism has resulted in the systematic disenfranchisement of peoples of color within the United States—a factor that is responsible for multiple racial/ethnic disparities. For this reason, race and ethnicity are useful indicators when conducting research about individuals and groups who have borne the brunt of systemic injustice.^{40,41}

Racism has traditionally been assumed to operate on three levels: institutionalized, personally mediated, and internalized. In recent years, however, this framework has been expanded to include systemic racism.

- *Institutionalized racism* is the “differential access to the goods, services, and opportunities of society by race.”³⁹ This level of racism is deeply embedded in the structures of our society and “often manifests as inherited disadvantage.”³⁹ It is often invisible and has no identifiable perpetrator. Institutionalized racism shapes an individual's relationships with the social determinants of health, and is the reason that race is associated with socioeconomic status.³⁹
- *Personally mediated racism* involves prejudice and discrimination. Prejudice is the “differential assumptions about the abilities, motives, and intentions of others according to their race,” whereas discrimination is “differential actions toward others according to their race.”³⁹ This level of racism encompasses conscious discrimination as well as unconscious or implicit bias, and often manifests as disrespect, devaluation, and dehumanization.
- *Internalized racism* is defined as “acceptance by members of the stigmatized races of negative messages about their own abilities and intrinsic worth.”³⁹
- *Systemic racism* refers to the way racism is embedded in society via policies, structures, and norms (e.g., norms such as white race racial frames) that perpetrate racism.

An overview of race-based disparities in maternal health outcomes, infant health outcomes, and access to and utilization of prenatal care is presented here

because these are prominent examples of racial health disparities germane to midwifery practice. However, racial disparities in health outcomes are not limited to maternal–child health.

Racial/Ethnic Disparities in Maternal–Child Health Outcomes

In the United States, black women have a three- to four-fold increased risk of dying of a pregnancy-related cause compared to white women.⁴² This racial disparity is even more severe in some specific regions of the country. A study conducted in New York, for example, found black women were 12 times more likely to die from pregnancy-related causes than white women.⁴³ Although black women do not experience higher rates of preeclampsia, eclampsia, placental abruption, placenta previa, or postpartum hemorrhage compared to white women, they are significantly more likely to die from these complications.⁴⁴ Other groups of color are also at increased risk for maternal mortality, with Native Americans/Alaska Natives being 1.5 times more likely to die in childbirth than white women. Maternal mortality is just the tip of the iceberg, though—for every maternal death, there are 100 women who experience severe maternal morbidities.⁴²

Similarly, rates of infant mortality demonstrate striking racial disparities. Infants born to Native Americans are 1.5 times more likely to die before their first birthday, and infants born to black parents are 2 times more likely to die in the first year of life. Data suggest that 80% of the black–white disparity in infant mortality is associated with a racial disparity in rates of extremely premature birth.⁴⁴ Black and Native Americans are at much greater risk for preterm birth than other racial groups. Racial disparities in preterm birth are especially disturbing because the health impacts for survivors of such births are lifelong effects. Black women are also at increased risk for fetal growth restriction and fetal demise.⁴⁴

Although the etiology of health disparities is complex, multifactorial, and incompletely understood, some of these outcomes can be attributed to social inequities. For example, the higher rates of fetal growth restriction may be due to the fact that black women are at higher risk for having inadequate pregnancy weight gain and experiencing food insecurity in pregnancy, and are more likely to live and work in areas with high levels of environmental pollutants.⁴⁴ Most studies have found that Hispanic women are at increased risk for giving birth to infants with neural tube defects. In one study, the spina bifida rate for Hispanic people was 4.18 per 10,000 births, compared to 2.90 and 3.37 per 10,000 births for black and white people, respectively.⁴⁴ Hispanics have also

been found to have lower rates of folic acid intake—a factor that is associated with an increased risk for neural tube defects.

Native American, Hispanic, and non-Hispanic black women are also at higher risk for starting prenatal care late compared to their white counterparts. In 2014, 11% of Native American women and 10% of black women initiated prenatal care in the third trimester or not at all, compared to only 4% of white women.⁴⁵ Insurance status and access to housing, transportation, and child care are all key social factors contributing to the etiology of this disparity.⁴⁵ Another likely contributor is perceived discrimination.

Racial and ethnic differences in maternal–child health outcomes are not explained by difference in genetics or “culture,” as studies continue to find that foreign-born individuals have better birth outcomes than U.S.-born persons of the same racial/ethnic groups, despite the fact that foreign-born women tend to start prenatal care later in pregnancy and have lower levels of formal education.⁴⁵ Most telling, the significant disparities in infant mortality, low birth weight, and preterm birth are not seen with foreign-born blacks, Asians, Hispanics, and Filipinos. This phenomenon supports the hypothesis that racial disparities in maternal–child health outcomes are at least partially caused by racism and the inequitable social structures it creates, rather than any innate genetic differences between racial groups.⁴⁴⁻⁴⁶

Sexual Orientation and Gender Identity

Formal mechanisms of demographic assessment such as the U.S. Census have been slow to include data on sexual orientation, and still do not collect data on gender identity. Nonetheless, it is clear that a large number of lesbian, gay, bisexual, queer (LGBQ) and transgender and gender-nonconforming (TGNC) individuals live in the United States; a 2016 Gallup poll found approximately 10 million adults in the United States identified as lesbian, gay, bisexual, or transgender, with higher rates observed among people of color.⁴⁷ A Williams Institute survey published in 2016 estimated that there are 1.4 million TGNC persons in the United States.⁴⁸ LGBQ and TGNC persons are disproportionately affected by poverty.⁴⁹ TGNC communities, in particular, report severe poverty, regardless of educational attainment. In general, LGBQ and TGNC people of color are significantly more likely to experience poverty than their white peers.⁴⁹ **Table 3-2** defines some common terms used in relation to gender identity.⁵⁰⁻⁵²

Table 3-2 Selected Terms Regarding Gender Identity	
Term	Definition
Agender	A person whose understanding of self is outside of the concept of gender, or does not align with a specific gender identity.
Binary gender construct	A social construct that recognizes only two, mutually exclusive gender identities: male and female. In the United States, gender has historically been understood only through a binary construct.
Cisgender	A person whose gender identity is in alignment with the sex assigned at birth; for example, a person who was assigned female at birth and identifies as a woman.
Gender	A social rather than biological construct, which assigns specific roles, traits, and responsibilities to a person based on the sex assigned at birth. These assigned characteristics are rooted in culture and may vary significantly between cultural groups.
Gender expression	The way in which a person outwardly expresses gender. Gender expression includes mannerisms, style of dress, behavior, and modifiable aspects of physical appearance.
Gender identity	A person's internal understanding of self in regard to gender. Gender identity may or may not be in alignment with one's sex or gender expression.
Gender nonconforming	A person whose gender identity is not limited to solely male or solely female. This umbrella term covers a diverse array of gender identities.
Nonbinary	Similar to "gender nonconforming," this is an umbrella term describing a person whose gender identity is not limited to solely male or solely female.
Sex	A construct that classifies people into separate categories based on their chromosomal makeup and the appearance of their genitals. One's natal sex is the sex that was assigned at the time of birth. Although often thought of as binary, in reality there is a great deal of human variation in regard to sex.
Transgender	A person whose gender identity is not in alignment, in some way, with the sex assigned at birth. Transgender people can have binary or nonbinary gender identities.
Transgender woman	A person who was assigned the male sex at birth and has a female gender identity. Transgender women may or may not pursue medical or surgical interventions to better align their physical appearance with their gender identity.
Transgender man	A person who was assigned the female sex at birth and has a male gender identity. Transgender men may or may not pursue medical or surgical interventions to better align their physical appearance with their gender identity.

Based on Fenway Health. Glossary of gender and transgender terms. 2010 Revision. Available at: http://fenwayhealth.org/documents/the-fenway-institute/handouts/Handout_7- C_Glossary_of_Gender_and_Transgender_Terms_.fi.pdf. Accessed December 19, 2017⁵⁰; Selix NW, Rowniak S. Provision of patient-centered transgender care. *J Midwifery Womens Health*. 2016 Nov;61(6):744-751⁵¹; Centers for Disease Control and Prevention. Lesbian, gay, bisexual and transgender health: transgender persons. Available at: <https://www.cdc.gov/lgbthealth/transgender.htm> Accessed December 19, 2017.⁵²

Today's healthcare infrastructure and systems are ill prepared to meet the needs of LGBTQ and TGNC individuals. Non-inclusive data collection, gendered clinic bathrooms, and assumptions of heterosexuality by providers and staff all contribute to a hostile care environment and decrease safety. Electronic health record (EHR) systems are particularly problematic in their inability to accurately capture key health data such as sexual identity, natal sex, and organ systems present; they also create barriers to respectful care by failing to provide clear systems for documenting

preferred names and pronouns.⁵³ Healthcare assessment and decision making are impaired when the provider does not have access to this information.

Research has demonstrated both explicit and implicit biases against LGBTQ and TGNC persons among healthcare providers.^{54,55} In large national surveys of TGNC individuals, respondents frequently reported delaying or avoiding needed health care or preventive health services due to fear of discrimination.⁴⁹

There are no published studies that describe LGBTQ and TGNC content in midwifery curricula.

In a national study of obstetrics and gynecology providers, 80% of respondents received no training on TGNC health during residency; only 35.3% reported that they would be comfortable providing care to transgender men, and 29% reported that they would be comfortable providing care to transgender women.⁵⁶ These findings are congruent with data regarding the lack of LGBQ and TGNC clinical content in both medical and nursing education programs in the United States. Lim et al.'s 2015 national survey of baccalaureate nursing school faculty demonstrated significant deficits in these areas: 75% of respondents reported that LGBQ- and TGNC-related content was entirely absent or very limited in their school's curriculum, and few reported adequate knowledge on issues pertinent to this population.⁵⁵ Lim et al. found a median of 2.12 hours of nursing curriculum time devoted to classroom teaching on LGBQ and TGNC health. Similarly, Obedin-Maliver et al.'s 2011 survey of 176 U.S. medical schools found a median of 2.0 clinical hours related to LGBQ and TGNC health in allopathic training programs, and 0 hours in osteopathic training programs.^{55,57}

LGBQ and TGNC Health Disparities

As with many marginalized communities, research on LGBQ and TGNC health is lacking in scope, quantity, and quality, limiting our understanding of the disease burden and health disparities within this population. While limited, the existing data do demonstrate that LGBQ and TGNC individuals experience disparities in both physical and mental health, including those related to depression, anxiety, smoking, alcohol use, and substance abuse. Rates of suicide are higher among LGBQ and TGNC youth as well as among TGNC individuals of all ages compared to their heterosexual peers.⁵⁸ Suicidality is highest among those who have experienced social insults such as family rejection, and for TGNC people of color. Available data also suggest that LGBQ and TGNC persons are at risk of transmission of all sexually transmitted infections (STIs) including human papillomavirus (HPV) and human immunodeficiency virus (HIV), although this risk often goes unrecognized by healthcare providers who treat LBQ women and TGNC individuals.

Metabolic and Cardiovascular Health

Research has consistently demonstrated that LBQ women are more likely to be overweight or obese than their heterosexual peers, with disparities in weight presenting as early as adolescence.⁵⁹⁻⁶¹ The clinical significance of this finding, however, is less clear. Systematic reviews of existing data have failed

to find evidence of increased rates of obesity-related morbidity such as diabetes, hypertensive disorders, or lipid disorders among LBQ women.^{59,62} Despite significant differences in weight status, research has also failed to show a difference in physical activity levels and healthfulness of diet in LBQ versus cisgender heterosexual women.⁶⁰ Additionally, limited research has suggested that many overweight or obese LBQ women are metabolically healthy. Similarly, research has revealed greater cardiovascular risk factors in adult LBQ women but has not clearly demonstrated an increase in actual cardiovascular morbidity and mortality.^{59,61-63} Data on weight status and metabolic health among TGNC individuals are sparse.

Sexual Health

Misinformation about transmission of STIs and vaginal infections between LBQ women and TGNC individuals is common among both providers and patients. This misunderstanding has contributed to a paucity of research about STI rates and STI prevention strategies in LBQ women. The data that are available demonstrate that LBQ and TGNC people are at risk of transmission of all STIs including chlamydia, HPV, and HIV.^{49,64-69} Bacterial vaginosis (BV) is common in LBQ women,⁶⁷ but data are not available on rates of BV in TGNC natal females.

Although the risk of direct female-to-female sexual transmission of HIV is low, HIV infection risk in LBQ women must be assessed in the full context of the individual's life risk factors, which may include sharing of needles during intravenous drug use, sex with natal males, and perceptions of invulnerability. For providers, it is important to recognize that identity and behavior do not always match; actual behaviors must be assessed by taking a comprehensive sexual history.

While data are still scant, more information is available on the incidence of HIV in TGNC persons. Data from the National HIV Surveillance System reveal that a total of 2351 TGNC people were newly diagnosed with HIV between 2009 and 2014; 84% were transgender women, 15.4% were transgender men, and 0.7% were people with nonbinary or other gender identities.⁶⁹ The majority of these diagnoses were in African American TGNC individuals.

It is likely that HIV and STI rates in LBQ women and TGNC people are underestimated due to deficiencies in reporting systems, bias in research design, provider discomfort with completing appropriate sexual health histories, and lack of provider knowledge about disease transmission risk.⁷⁰ For example, few studies capturing data on sexual health in transgender men report the natal sex of participants' sexual

partners, likely under the assumption that transgender men partner only with natal females.⁷¹ Without this information, it is difficult to assess magnitude of risk; this is particularly concerning given that risky sexual behaviors in transgender men are associated with partnering with natal males.⁷¹

Violence Against LGBQ and TGNC People

Violence against LGBQ and TGNC persons accounts for a significant proportion of hate-based violence in the United States, and is most common against persons of color.⁷² Transgender women of color bear the highest burden of lethal anti-LGBQ and TGNC hate violence in the United States. In November 2017, the Human Rights Campaign and the Trans People of Color Coalition released a report confirming that a total of 25 murders of TGNC people had been reported in the United States that year; another 3 TGNC people were murdered by the end of the year.⁷³ The number of reported LGBQ and TGNC hate crimes is lower than the true incidence due to both victim hesitance to report these crimes and failure of the law enforcement system to properly investigate and classify these crimes.⁷⁴

Violence against LGBQ and TGNC persons, including hate-based violence, often occurs at the hands of school peers, family members, and intimate partners. In a 2014–2015 national survey of 10,528 gay, LBQ, and TGNC youth between the ages of 13 and 21 years, experiences of discrimination and fear were common. In this cohort, 58% reported that they felt unsafe while at school due to their sexual orientation; 27% reported experiencing physical harassment and 13% reported experiencing physical assault due to their sexual orientation.⁷⁵ Among students who were subjected to discrimination due to their gender identity, 43% reported feeling unsafe, 20% reported physical harassment, and 9% reported physical assault.⁷⁶

Gender-Based Violence

The term *gender-based violence* is used to describe the violence that occurs as a result of gender role expectations and inequality in the access to power, money, and resources by different genders.⁷⁷ This term is broad enough to capture shared root causes in a range of expressions of violence and dominance. In this section, four forms of gender-based violence that have implications for clinical midwifery care are reviewed: (1) violence against LGBQ and TGNC persons, (2) intimate-partner violence (IPV), (3) reproductive coercion, and (4) sexual coercion.

In the United States, 1 in 3 cisgender women and 1 in 6 cisgender men will experience sexual violence

in their lifetime. Midwives provide sexual and reproductive health care to individuals of all ages and particularly during times when the psychological effects of gender-based violence may be triggered, such as pregnancy, labor, and birth. The topic of how gender-based violence affects health and the provision of *trauma-informed care* is of particular importance in midwifery. Midwives must be prepared to offer harm-reducing strategies and ready to provide referrals as needed. Harm-reducing strategies include discrete discussions regarding contraceptive options and establishing a safety plan.

Family and intimate-partner violence are also common experiences for LGBQ and TGNC youth and adults. In the 2015 U.S. Trans Survey, 10% of respondents reported violence perpetrated by a family member due to their gender identity (at any age), and 26% had been excommunicated by an immediate family member due to their gender identity.⁴⁹ Some data suggest that rates of IPV among LGBQ and TGNC adults are approximately the same as those among heterosexual couples;⁷⁸ other data suggest higher lifetime rates, including for severe physical IPV.^{49,79} Among LBQ women, bisexual women experience the highest rates of IPV and are also more likely than their lesbian and heterosexual peers to experience sexual violence.⁷⁹

Intimate-Partner Violence

Intimate-partner violence is a pattern of assaultive and coercive behaviors that includes inflicted physical injury, psychological abuse, sexual assault, progressive social isolation, stalking, deprivation, intimidation, and threats. IPV is perpetrated by someone who is, was, or wishes to be involved in an intimate or dating relationship, and these behaviors are aimed at establishing control over one partner by the other.⁸⁰ IPV can affect any person, regardless of gender, sexual orientation, race, physical ability, or SES. Although cisgender men and women both experience IPV, significantly more cisgender women than men report needing medical care and experiencing longer-term consequences such as ongoing fear and post-traumatic stress disorder symptoms.

Intimate-partner violence may occur for the first time or worsen during pregnancy.^{82,83} Persons who are pregnant or in the first year postpartum are at increased risk for homicide, with the majority of these crimes occurring secondary to IPV.^{80,82,83} Beyond physical outcomes of IPV, victims are at increased risk for a range of other negative health-related sequelae, including STIs, pelvic inflammatory disease, and unintended pregnancy. Persons who have experienced IPV also have higher rates of physiological disorders and mental health

conditions such as chronic pain, neurologic disorders, gastrointestinal disorders, migraine headaches, depression, post-traumatic stress disorder, anxiety disorders, substance abuse, and suicidal behavior. Among women who are pregnant, IPV is associated with an increased risk for preterm birth and low birth weight.⁸⁴ Pregnant women who are hospitalized following assault have higher rates of multiple adverse outcomes, including placental abruption, uterine rupture, fetal demise, and preterm birth.⁸⁵

Screening and support for women who have experienced IPV is reviewed in several chapters in this text. Many individuals may not choose to disclose current or past gender-based violence. However, routine screening can provide an opportunity to offer information about healthy relationships, safety plans, and nonjudgmental support.

For clients who disclose current or past experience with gender-based violence, further assessment of risks and information about safety plans and resources can be offered. It is also important to assess their current safety. All clients, including those who do not disclose current or past IPV, should be provided with safety information about violence. Evidence shows that receipt of safety information reduces violence and increases safety for recipients, even for those who did not disclose an unsafe relationship during the healthcare provider's assessment. Resources for IPV screening and safety information are listed at the end of this chapter.

Reproductive and Sexual Coercion

Reproductive coercion describes “behaviors aimed to maintain power and control in a relationship related to reproductive health by someone who is, was, or wishes to be involved in an intimate or dating relationship with an adult or adolescent.”⁸⁶ Reproductive coercion includes tampering with a person's birth control in an explicit attempt to make the person become pregnant. It also includes coercive, threatening, or violent behavior intended to make a person end a pregnancy the individual does not want to end or continue a pregnancy the individual does not want to continue. People who are the victims of IPV are at higher risk for reproductive coercion.^{86,87}

Sexual coercion “happens within the context of a relationship” and includes a range of behaviors that are used to coerce a person to have sex but do not rely on physical force. Examples of sexual coercion include forcing or repeatedly pressuring a partner to have sex, refusing to use a condom and nonconsensual removal of a condom during sex, intentionally exposing a partner to an STI, or threatening or harming a partner when notified about a positive STI test.

Trauma-Informed Care

Healthcare examinations can trigger fear, trauma, or post-traumatic stress symptoms in persons who have a history of sexual abuse, prior experience with insensitive providers, or prior experience of painful care. Furthermore, the United States has a history of obstetric violence and reproductive coercion that disproportionately affects women of color, a fact that contributes to historical trauma.⁸⁸ Approximately one-third of cisgender females have experienced sexual abuse. Because pelvic examinations are commonly recommended in midwifery practice, trauma-informed care is another technique of import that all midwives can incorporate into their clinical practice.⁸⁹ Trauma-informed care includes multiple strategies that allow the client to maintain control, including careful attention to respectful language and obtaining permission, shared decision making, self-collection of vaginal samples, offering to let the client insert a vaginal speculum, and avoiding use of stirrups.

Techniques and Tools to Address Health Disparities in Midwifery Practice

The combined effects of social determinants of health, healthcare provider bias, and discrimination form a potent force that creates and perpetrates health disparities. The population served by the midwifery profession is more racially and ethnically diverse than is the population as a whole,⁹⁰ which makes health disparities a topic of prime importance in midwifery practice. This section presents an introductory overview of ways midwives can provide care that incorporates knowledge about social determinants of health, healthcare provider bias, and the effects of discrimination.

Cultural Competency, Cultural Humility, and Structural Competency

Culture is an integrated pattern of human behavior that includes the sum of actions, behaviors, language, thoughts, communications, customs, beliefs, values, and institutions that differentiate one group of people from another group. Culture is dynamic, not static. Moreover, culture is necessarily made up of both visible and invisible components. For example, actions and behaviors are visible components of culture, while the ideas, values, and attitudes that support action and behavior are not visible. Failure to recognize the core aspects of culture that are not visible is a major impediment in any effort to meet an individual's needs.

As the U.S. population has become more diverse, the need to provide *culturally and linguistically appropriate services (CLAS)* has become increasingly

necessary in healthcare delivery. CLAS standards for healthcare services were initially developed in 2000 by the U.S. Department of Health and Human Services Office of Minority Health⁹¹; these standards provide a blueprint for implementing culturally and linguistically appropriate services. In 2003, the publication of *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care* by the Institute of Medicine further documented the need for CLAS in healthcare services.¹⁴ Subsequently, healthcare organizations have established requirements for cultural competency training.

The *cultural competency* framework requires providers and healthcare systems to “understand the importance of social and cultural influences on patients’ health beliefs and behaviors and consider how these factors interact at multiple levels of the health care delivery system.” Key to achieving cultural competence is the expansion of cultural knowledge and subsequent adaptation to cultural differences.⁹²

Despite being a popular framework that has been widely promoted, cultural competence training has had only modest success. Notably, these programs improve knowledge and attitudes among providers, but have only a limited effect on patient outcomes.⁹³ In fact, the cultural competency framework may reinforce stereotypes rather than expand awareness and understanding. For example, “culture” is often conflated with racial or ethnic identity, thereby reinforcing racial stereotypes. Perhaps one of the most important critiques of the cultural competency framework is that it maintains the normative perspective of the dominant social categories, which suggests that the patient is responsible for culturally assimilating so as to improve health.⁹⁴

Nonetheless, there is obvious inherent value in understanding the cultural beliefs and norms that influence a person’s perceptions and behaviors. This understanding can be better achieved when approached from a *cultural humility* perspective: “a commitment and active engagement in a lifelong learning process that individuals enter into on an ongoing basis with patients, communities, colleagues and themselves.”⁹⁵ In addition to promoting ongoing attentiveness, respect, and openness toward others’ perspectives and experiences, cultural humility focuses on ongoing critical self-reflection of one’s individual culture(s), acknowledging personal beliefs, values, and experiences. This includes critical self-reflection on the culture of the midwifery profession and the healthcare system. Cultural humility encourages consideration of the power dynamics in the patient–provider relationship so that it can be reframed to a partnership and opportunity for advocacy.

Each healthcare interaction occurs in the context of three cultures: (1) the midwife’s lived experience, (2) the experiences of the person seeking care, and (3) the culture of the healthcare system itself. Cultural norms and values shape a midwife’s approach to care, and cultural forces shape the healthcare system as a whole. Thus, helping a person attain optimal health requires an awareness and assessment of the effects of all three cultures.

In describing any culture or cultural practice, it is important to note that within-group differences are likely to be as great as across-group differences. Wide variations in attitudes, beliefs, and behaviors exist among individuals. To assume that people who share a common culture and language are alike in all ways is to make a dangerous mistake. In addition, just as individuals may have multiple social identities, they may identify with multiple cultures simultaneously and over the course of their lifetimes.

Structural Competency

Structural competency extends the concept of cultural humility; it is the trained ability to understand how symptoms, attitudes, or diseases represent downstream implications of a wide variety of upstream structural systems. Structural competency is defined by the development of five core skills: (1) development of an extra-clinical language of structure, (2) rearticulation of “cultural” presentations in structural terms, (3) imagining of structural interventions, (4) development of structural humility, and (5) recognition of the structures that shape clinical interactions.⁹⁶

Developing an extra-clinical language of structure requires an awareness of how social structures affect the health of communities. Rearticulating “cultural” presentations in structural terms invites the midwife to recognize and describe the structural causes of “cultural,” “behavioral,” or “lifestyle” risk factors—for example, recognizing and exploring the impact of food deserts and lack of access to safe recreational spaces on the food- and exercise-related habits of clients from low-SES neighborhoods. Imagining structural interventions encourages the midwife to conceive of and participate in developing interventions that address barriers to optimal health. Developing *structural humility* ensures that the midwife recognizes the need to continue learning. This is a lifelong commitment to learning and growing. Taken together, these four skills sets help the midwife recognize the structures that shape clinical interactions, including the various economic, social, and political forces that affect the person, as well as the contributions made by the power and privilege dynamic between the patient and the clinician in the clinical encounter.

Interventions That Address Social Determinants of Health

Interventions that improve health disparities often involve multidisciplinary partnerships between health-care providers and community organizations.⁹⁷⁻¹⁰⁰ A thorough review of all interventions that may potentially decrease health disparities is beyond the scope of this text, but the reader is referred to the Resources section at the end of this chapter and recent reviews for more information.⁹⁷⁻¹⁰⁰ Among the interventions that show promise as a means of improving health disparities in maternity care are screening for social determinants of health at initiation of care, bundling of prenatal care with other services that address social determinants known to affect the population, CenteringPregnancy group prenatal care, home visiting programs using community health workers and nurses, and accountable care organizations.⁴⁵ One intervention that has not yet been given significant attention is increasing diversity among the healthcare workforce.

Racial and Ethnic Disparities Effects on the Midwifery Workforce

A growing body of literature demonstrates that racial diversity in the healthcare workforce increases access to care, boosts adherence relative to treatments, and improves the quality of patient-provider interactions for people of color.^{101,102} Midwives of color serving clients of similar backgrounds are uniquely positioned to understand the social, economic, and political forces that affect their patients. Cultural and *values concordance* facilitates communication and the provision of high-quality care.^{101,102} Although racially diversifying the healthcare workforce is certainly an important intervention that can reduce racial disparities in health, currently 98% of nurse-midwifery practitioners in the United States identify as white.¹⁰³ Racism also limits access to midwifery education. Studies of midwives of color have found that institutional and interpersonal racism is pervasive in midwifery education programs, clinical settings, and professional organizations, and this racism poses a barrier to persons of color joining the midwifery profession.¹⁰⁴

How did midwifery evolve into a predominantly white profession? Also, how does the profession's lack of racial diversity impact a midwife's ability to care for persons from diverse populations? A brief history of midwifery in three different communities of color offers a glimpse into the work of midwives in these communities and highlights the care they have provided. These stories exemplify the value of social/cultural concordant care and show how midwives who are part of the communities that they serve can

bridge the gap between cultures to better meet women's needs. These stories also document how racism has contributed to the elimination of midwives of color, thereby producing the lack of workforce diversity now apparent.

New Mexico's *Curandera-Parteras*

—*Felina M. Ortiz*

Historically, traditional midwives, especially in communities of color, provided much of the maternity care. Most were elders in their community and were apprenticed for many years by their ancestors.¹⁰⁵ The midwives shared the communities' language and culture. As allopathic medicine was increasingly adopted and traditional midwifery became less valued in many parts of the United States, New Mexico was one of the few states that worked with the traditional Hispanic midwives, known as *curandera-parteras*, instead of against them. Officials of the New Mexico Department of Health recognized the challenge of providing obstetric care in the rural communities and the need for the *curandera-parteras*. In 1936, New Mexico's public health service bridged traditional health and modern medical care with a formal midwifery consultant program.¹⁰⁵ This program offered educational support and supplies to the *curandera-parteras*, while they in turn provided much needed obstetric care in hard-to-reach communities and completed the paperwork that improved New Mexico's vital statistics database. This partnership was one of the many elements that contributed to New Mexico being the state with the highest percentage of midwife-attended births in the nation to this day, almost a century after the program began.

In 1979, New Mexico introduced regulations that required all practicing *curandera-parteras* to obtain formal education and pass the licensing examination in English. These regulations worked toward the elimination of these practitioners, as many of them were not English literate.¹⁰⁵ This system of oppression and the loss of these practitioners disrupted an established system of maternal-child health care and is a potent illustration of institutional and systemic racism.

Grand Midwives of African Ancestry

—*Patricia O. Loftman, Betty Watts Carrington, Heather Clarke, Carolyn Curtis, and Karline Wilson-Mitchell*

The origin of the traditional grand midwife began in Africa and was transplanted to the Americas through the trans-Atlantic slave trade in the 1600s. The grand midwives brought their knowledge, skills, and cultural

traditions of childbirth that had been transmitted throughout generations via observation, apprentice training, personal experience, and oral tradition. During the period of enslavement, these midwives attended births, provided many other healthcare services, and were the foundation of the healthcare system for enslaved people on plantations. The midwife was respected and revered not just as an elder, but as a central and integral figure in the home and community. Grand midwives lived in the community, knew families intimately, and acted as an advocate and a source of comfort and support as they carried on the tradition of serving families through generations.

Onnie Lee Logan (1910–1995), who delivered hundreds of babies between 1931 and 1984, seemed to know every secret, herb, folk remedy, and “God-given motherwit” required to give birth in a poor community. She performed a role that many midwives filled, meeting needs holistically, whether catching a baby or providing food to a poor family.¹⁷ Margaret Charles Smith (1906–2004) worked as a midwife in the days of Jim Crow laws that enforced racial segregation in the Southern United States. Ms. Smith described how she had to enter through the side or back door to attend white mothers. She also described how home births provided the opportunity for the midwife to “stay with the woman as long as she needed,” in contrast to the lonely hospital environment. She viewed her role as providing support, knowledge, and advocacy in her community.¹⁰⁶

Discriminatory regulations developed by campaigning physicians and public health departments successfully eliminated grand midwives from practice in the 1930s and 1940s using methods that would today be described as structural and systemic racism. Physician representatives created financial incentives associated with providing maternity care for their peers and promoted propaganda that described African American midwives as “illiterate, uneducated, dirty, and dangerous.” High rates of maternal and infant mortality were blamed on the practices of the grand midwives rather than on unequal access to public resources. Grand midwives were subsequently required to register with local health departments to obtain a practice permit and were required to attend classes at state training institutes.¹⁰⁷ The campaign was effective—but as more births took place in the hospital with physician attendants, maternal and infant mortality sharply increased, with many deaths due to infectious diseases and complications from unnecessary medical interventions.

The first formal educational program for African American midwives, Tuskegee School of Nurse-Midwifery, opened in 1941 but was in existence for only 6 years.

Tuskegee graduated 31 African American nurse-midwives who provided general health care, became liaisons and resources between the community and local health departments, contributed to reductions in maternal and infant morbidity and mortality rates, and educated future generations of African American midwives. Two of the most notable Tuskegee graduates were Maude Callen (1898–1990) and Constance Manning Derrell. Mrs. Callen served her community in South Carolina for more than 50 years, increasing the visibility of nurse-midwives. Traditional grand midwives laid the foundation and their legacy provides inspiration to contemporary midwives of color. Their work can be seen as a blueprint for the provision of high-quality, client-centered care

Indigenous Midwives and the Indian Health Service

—***Susan Stemmler and Nicolle L. Gonzales***

The history of Indigenous midwifery in the United States is a tapestry of anthologies, held in the hearts of birth knowledge keepers across Turtle Island (North America). Much of that knowledge was passed down through stories from grandmothers to granddaughters, and from medicine women to their apprentices. During the early twentieth century, while traditional grand midwives were serving African American and poor women in the South and *curandera-parteras* were attending the births of Latina women in New Mexico, indigenous traditional midwives were attending the births of American Indian and Alaska Native women in their homes.

Historically, indigenous traditional midwives were responsible for the births of American Indian and Alaska Native people. Over the centuries, American Indian and Alaska Native communities were transformed by U.S. governmental policies and predatory assimilation practices that forever changed the lives of American Indian people.

The relationship between tribal governments and the federal government is founded in the U.S. Constitution, which recognizes that federally recognized Indian tribes are sovereign nations with certain inherent rights. This distinguishes American Indians and American Natives from all other ethnic groups in the United States. Many of the treaties recognize government-supplied health care as payment for the U.S. government taking Indian lands. Today the Indian Health Services (IHS), which is housed in the U.S. Department of Health and Human Services, is the principal provider of health care and health advocacy for the 567 federally recognized indigenous tribes in the United States.

Traditional midwives were not included or utilized as part of the IHS mission; however, traditional knowledge keepers and birth attendants continued to share ceremonial teachings with their communities outside the formal profession of nurse-midwifery. Today nurse-midwives working for IHS attend more than 75% of all births, although nearly all midwives employed by IHS are not of American Indian or American Native descent. Nonetheless, Native American nurse-midwives have worked to bridge indigenous customs with hospital care.¹⁰⁸ For example, Ursula Knoki-Wilson, who began practice at the Chinle Comprehensive Health Center hospital in 1977, received the 2017 W. J. Haffner American Indian/American Native Women’s Health Award for her years of service to advancing women’s health care and cultural awareness for American Indian and Alaska Native women.

There is currently a movement to reclaim indigenous birth knowledge within tribal communities. The definition and scope of indigenous midwifery are evolving, and many Indigenous women are seeking this knowledge through their community healers and midwives. Many indigenous midwives choose to work outside the healthcare systems because the dominant culture in these sites does not support the ceremonial wellness that is important to members of these communities. The history of indigenous midwifery is still being written and the future of indigenous midwifery is still being molded, while interweaving evidence-based practice and traditional indigenous practice.

Conclusion

This chapter presents a broad overview but only a brief introduction to a few of the critical factors that affect an individual’s health. Space limitations precluded the inclusion of important topics such as health literacy and health numeracy, which are essential for understanding healthcare information. In addition, several critical health disparities were not addressed in this chapter, including those secondary to lack of access to healthcare services, a serious problem for many who live in rural settings. Similarly, information about the needs of populations such as religious minorities, immigrants, persons with disabilities, and persons exposed to trauma or adverse childhood experiences was not included. The content presented here can be used as a framework for a way to approach clients and what needs to be understood to care for clients who come from many different backgrounds, histories, and cultures—midwifery is a lifelong learning process.

Other chapters in this text address the clinical knowledge needed to offer specific healthcare services. Nevertheless, clinical expertise can be effective only when the topics presented in this chapter are addressed. Each healthcare encounter between a midwife and a client occurs within a social and cultural milieu that can either perpetrate health disparities or mitigate them. Addressing social determinants of health, avoiding healthcare provider bias, and providing care that meets the needs of the individual is essential every time, with every person.

Resources

Organization	Description	Webpage
Culturally and Linguistically Appropriate Services		
U.S. Department of Health and Human Services (DHHS)	Culturally and linguistically appropriate services (CLAS) standards. Resources for CLAS.	https://www.thinkculturalhealth.hhs.gov/clas https://www.thinkculturalhealth.hhs.gov/resources/library
Cultural Responsiveness Training for Healthcare Providers		
U.S. Department of Health and Human Resources (DHHS)	Think Cultural Health is a website that has collected resources, online courses, and links to other resources for culturally and linguistically appropriate services. Office of Minority Health, national CLAS standards.	https://www.thinkculturalhealth.hhs.gov/about https://www.hhs.gov/ash/oah/resources-and-training/tpp-and-paf-resources/cultural-competence/index.html https://www.thinkculturalhealth.hhs.gov/pdfs/EnhancedNationalCLASstandards.pdf?utm_source=H2RMinute+PCMH+May+8%2C+2013&utm_campaign=H2R+Minutes+May+8%2C+2013&utm_medium=email

(continues)

Organization	Description	Webpage
Gender-Based Violence		
American College of Obstetricians and Gynecologists (ACOG) and Futures Without Violence	"Addressing Intimate Partner Violence, Reproductive and Sexual Coercion: A Guide for Obstetric, Gynecologic and Reproductive Health Care Settings," 3rd ed.	https://www.futureswithoutviolence.org/userfiles/file/HealthCare/Reproductive%20Health%20Guidelines.pdf
Futures Without Violence	A four-panel double-sided tool folds up to the size of a business card. The card helps women recognize how their relationship affects their health and provides information on safety planning. The back of the card provides information about referral to the National Domestic Violence Hotline.	https://www.futureswithoutviolence.org/is-your-relationship-affecting-your-health-safety-card/
National Domestic Violence Hotline	This site has safety planning, information about legal issues, and additional resources.	http://www.thehotline.org/help/path-to-safety/#leaving
Health Literacy Agency for Health Care Research and Quality (AHRQ)	Health Literacy Universal Precautions Toolkit, 2nd ed.	https://www.ahrq.gov/professionals/quality-patient-safety/quality-resources/tools/literacy-toolkit/healthlittoolkit2.html
Health Provider Implicit Bias		
Harvard University	The Implicit Association Test (IAT) measures attitudes and beliefs that may be unconscious, identifying the strength of associations. It is validated and widely used.	https://implicit.harvard.edu/implicit/takeatest.html
LGBQ and TGNC Resources		
Center for Excellence in Transgender Health	Multiple resources for persons who are transgender and gender nonbinary people, including guidelines for primary care, online education programs, and referrals.	http://transhealth.ucsf.edu
Fenway Institute	The National LGBT Health Education Center provides resources and education to support optimizing the health of LGBT persons.	https://www.lgbthealtheducation.org
Gay and Lesbian Medical Association (GLMA)	Guidelines for care of LGBT patients.	http://glma.org/_data/n_0001/resources/live/GLMA%20guidelines%202006%20FINAL.pdf
World Professional Association for Transgender Health (WPATH)	Standards of care for the health of transsexual, transgender, and gender nonconforming people, version 7.	http://www.wpath.org/site_page.cfm?pk_association_webpage_menu=1351&pk_association_webpage=3926
Racial Health Disparities		
Agency for Health Care Research and Quality (AHRQ)	AHRQ activities to reduce racial and ethnic disparities in health care.	https://www.ahrq.gov/research/findings/factsheets/minority/disparities/index.html
Department of Health Policy, School of Public Health and Health Services, George Washington University	"Racial and Ethnic Disparities in Health Care: A Chartbook."	http://www.commonwealthfund.org/usr_doc/Mead_raceethnicdisparities_chartbook_1111.pdf

Organization	Description	Webpage
Social Determinants of Health		
Centers for Disease Control and Prevention (CDC)	Social determinants of health: Definition, resources, statistics, and links to agencies that explore social determinants of health.	https://www.cdc.gov/nchhstp/socialdeterminants/resources.html
Federal Office of Rural Health Policy - Rural Health Information Hub	Provides information and resources on rural health and health care, including approaches to improving rural health disparities.	https://www.ruralhealthinfo.org/about
<i>Healthy People 2020</i>	This website has multiple resources that explore causes and strategies to decrease adverse health outcomes secondary to social determinants of health.	https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-health/interventions-resources
Trauma-Informed Care		
Reproductive Health Access Project	Information on techniques for trauma-informed pelvic examinations and additional resources.	https://www.reproductiveaccess.org/resource/trauma-informed-pelvic-exams/
Public Health Agency of Canada	"Handbook on Sensitive Practice for Health Care Providers: Lessons from Adult Survivors of Childhood Sexual Abuse."	https://www.integration.samhsa.gov/clinical-practice/handbook-sensitive-practices4healthcare.pdf

References

1. McGinnis JM, Williams-Russo P, Knickman JR. The case for more active policy attention to health promotion. *Health Affairs*. 2003;21(2):78-93.
2. Schroeder SA. Shattuck Lecture. We can do better—improving the health of the American People. *N Engl J Med*. 2007;357(12):1221-1228.
3. Commission on Social Determinants of Health. *Closing the Gap in a Generation: Health Equity Through Action on the Social Determinants of Health. Final Report of the Commission on Social Determinants of Health*. Geneva, Switzerland: World Health Organization; 2008. Available at: http://www.who.int/social_determinants/thecommission/finalreport/en/. Accessed January 16, 2018.
4. Centers for Disease Control and Prevention. Health disparities and inequities report—United States, 2013. *MMWR Suppl*. 2013;62(3):1-187. Available at: https://www.cdc.gov/mmwr/preview/ind2013_su.html#HealthDisparities2013. Accessed January 16, 2018.
5. Braveman P. The social determinants of health: it is time to consider the causes of the causes. *Public Health Rep*. 2014;129(suppl 2):19-31.
6. Bowleg L. The problem with the phrase women and minorities: intersectionality—an important theoretical framework for public health. *Am J Public Health*. 2012;102(7):1267-1273.
7. Hankivsky O, Grace D, Hunting G, et al. An intersectionality-based policy analysis framework: critical reflections on a methodology for advancing equity. *Int J Equity Health*. 2014;13:119.
8. Byrne A, Tanesini A. Instilling new habits: addressing implicit bias in healthcare professionals. *Adv Health Sci Educ*. 2015;20(5):1255-1262.
9. Hall WJ, Chapman MV, Lee KM, et al. Implicit racial/ethnic bias among health care professionals and its influence on health care outcomes: a systematic review. *Am J Public Health*. 2015;105(12):e60-e76.
10. Hatzenbuehler ML, Phelan JC, Link BG. Stigma as a fundamental cause of population health inequalities. *Am J Public Health*. 2013;103(5):813-821.
11. Teal CR, Gill AG, Green AR, Crandall S. Helping medical learners recognize and manage unconscious bias toward certain patient groups. *Med Educ*. 2012;46:80-88.
12. FitzGerald C, Hurst S. Implicit bias in healthcare professionals: a systematic review. *BMC Med Ethics*. 2017;18(1):19.
13. Stone J, Moskowitz GB. Non-conscious bias in medical decision making: what can be done to reduce it? *Med Educ*. 2011;45:768-776.
14. Institute of Medicine. *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care*. Washington, DC: National Academies Press; 2003. Available at:

- <https://www.nap.edu/read/12875/chapter/1>. Accessed January 20, 2018.
15. Byrne A, Tanesini A. Instilling new habits: addressing implicit bias in health care professionals. *Adv Health Sci Educ*. 2015;20(5):1255-1262.
 16. Bay Area Regional Health Inequities Initiative. Available at: <http://barhii.org/framework/>. Accessed January 16, 2018.
 17. Logan OL, Clark K. *Motherwit: An Alabama Midwife's Story*. San Francisco, CA: Untreed Reads Publishing; 1989, updated 2013.
 18. Breckinridge M. *Wide Neighborhoods: A Story of the Frontier Nursing Service*. New York, NY: Harper; 1952.
 19. Smith SL. *Japanese American Midwives: Culture, Community, and Health Politics, 1880–1950*. Champaign, IL: University of Illinois Press; 2010.
 20. The JJ Way: A patient-centered model of care. *Commonsense Childbirth*. Available at: <http://www.commonsensechildbirth.org/jjway/>. Accessed January 16, 2018.
 21. LaDuke W. *All Our Relations: Native Struggles for Land and Life*. Chicago, IL: Haymarket Books; 1999.
 22. Robinson K, Garnier-Villarreal M, Hanson L. Effectiveness of CenteringPregnancy on breastfeeding initiation among African Americans: A systematic review and meta-analysis. *J Perinat Neonatal Nurs*. 2018. doi:10.1097/JPN.0000000000000307 [Epub ahead of print].
 23. Mazzoni SE, Carter EB. Group prenatal care. *Am J Obstet Gynecol*. 2017;216(6):552-556.
 24. Richardson AS, Ghosh-Dastidar M, Beckman R, et al. Can the introduction of a full-service supermarket in a food desert improve residents' economic status and health? *Ann Epidemiol*. 2017;27(12):771-776.
 25. Geronimus AT, Hicken M, Keene D, Bound J. "Weathering" and age patterns of allostatic load scores among blacks and whites in the United States. *Am J Public Health*. 2006;96(5):826-833.
 26. Shannon M, King TL, Kennedy HP. Allostatics: a theoretical framework for understanding and evaluating perinatal health outcomes. *J Obstet Gynecol Neonatal Nurs*. 2007;36:125-134.
 27. Patchen L, Rebok G, Astone NM. Differences in obesity rates among minority and white women: the latent role of maternal stress. *J Midwifery Womens Health*. 2016;61:489-496.
 28. Shalev I, Entringer S, Wadhwa PD, et al. Stress and telomere biology: a lifespan perspective. *Psychoneuroendocrinol*. 2013;38(9):1835-1842.
 29. Brave Heart M. The historical trauma response among Natives and its relationship with substance abuse: a Lakota illustration. *J Psychoactive Drugs*. 2003;35:7-13.
 30. Latendresse G. The interaction between chronic stress and pregnancy: preterm birth from a biobehavioral perspective. *J Midwifery Womens Health*. 2009;54(1):8-17.
 31. Willis E, McManus P, Magallanes N, Johnson S, Majnik A. Conquering racial disparities in perinatal outcomes. *Clin Perinatol*. 2014;41(4):847-875.
 32. Lu M, Halfon N. Racial and ethnic disparities in birth outcomes: a life course perspective. *Mat Child Health J*. 2003;7(1):13-30.
 33. Wadhwa PD, Buss C, Entringer S, Swanson JM. Developmental origins of health and disease: brief history of the approach and current focus on epigenetic mechanisms. *Semin Reprod Med*. 2009;27(5):358-368.
 34. Cater PO, Baquet C. What is a health disparity? *Public Health Rep*. 2002;117:426-434.
 35. Braveman PA, Cubbin C, Egerter S, et al. Socioeconomic status in health research: one size does not fit all. *JAMA*. 2005;294(22):2879-2888.
 36. Iton A. Tackling the root causes of health disparities through community capacity building. In: Hofrichter R, Bahtia R, eds. *Tackling Health Inequities Through Public Health Practice: Theory to Action*. Oxford, UK: Oxford University Press; 2010:370-417.
 37. National Center for Health Statistics. 2012. *Health, United States, 2011: With Special Feature on Socioeconomic Status and Health*. Hyattsville, MD: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics. Available at: <http://www.cdc.gov/nchs/data/hsr/hsr11.pdf>. Accessed January 20, 2018.
 38. Williams DR, Sternthal M. Understanding racial/ethnic disparities in health: sociological contributions. *J Health Soc Behav*. 2010;51(suppl):S15-S27.
 39. Jones CP. Levels of racism: a theoretic framework and a gardener's tale. *Am J Public Health*. 2000;90(8):1212-1215.
 40. Bailey ZD, Kreger N, Agfenor M, Graves J, Linos N, Bassett MT. Structural racism and health inequities in the USA: evidence and interventions. *Lancet*. 2017;389(10077):1453-1463.
 41. Braveman PA, Heck K, Egerter S, et al. The role of socioeconomic factors in Black-White disparities in preterm birth. *Am J Public Health*. 2015;105(4):694-702.
 42. Creanga AA, Berg CJ, Ko JY, et al. Maternal mortality and morbidity in the United States: where are we now? *J Womens Health*. 2014;23(1):3-9.
 43. New York City Department of Health and Mental Hygiene, Bureau of Maternal and Child Health. *Pregnancy-associated mortality, New York City, 2006–2010*. New York, NY: New York City Department of Health and Mental Hygiene, Bureau of Maternal and Child Health; 2015.
 44. Bryant AS, Worjolah A, Caughey AB, Washington AE. Racial/ethnic disparities in obstetrical outcomes and care: prevalence and determinants. *Am J Obstet Gynecol*. 2010;202(4):335-343.
 45. Gadson A, Akpovi E, Mehta PK. Exploring the social determinants of racial/ethnic disparities in prenatal care utilization and maternal outcome. *Semin Perinatol*. 2017;41(5):308-317.

46. Alhusen JL, Bower KM, Epstein E, Sharps P. Racial discrimination and adverse birth outcomes: an integrative review. *J Midwifery Womens Health*. 2016;61:707-720.
47. Gates GJ. LGBT data collection amid social and demographic shifts of the US LGBT community. *Am J Public Health*. 2017;107(8):1220-1222.
48. Flores AR, Herman JL, Gates GJ, Brown TNT. *How Many Adults Identify as Transgender in the United States?* Los Angeles, CA: Williams Institute; 2016.
49. James SE, Herman JL, Rankin S, Keisling M, Mottel L, Anafit M. *The Report of the 2015 U.S. Transgender Survey*. Washington, DC: National Center for Transgender Equality; 2016. Available at: <https://www.transequality.org/sites/default/files/docs/USTS-Full-Report-FINAL.PDF>. Accessed December 19, 2017.
50. Fenway Health. Glossary of gender and transgender terms. 2010 revision. Available at: http://fenwayhealth.org/documents/the-fenway-institute/handouts/Handout_7-C_Glossary_of_Gender_and_Transgender_Terms__fi.pdf. Accessed December 19, 2017.
51. Selix NW, Rowniak S. Provision of patient-centered transgender care. *J Midwifery Womens Health*. 2016;61(6):744-751.
52. Centers for Disease Control and Prevention. Lesbian, gay, bisexual and transgender health: transgender persons. Available at: <https://www.cdc.gov/lgbthealth/transgender.htm>. Accessed December 19, 2017.
53. Callahan EJ, Hazarian S, Yarborough M, Sánchez JP. Eliminating LGBTIQ health disparities: the associated roles of electronic health records and institutional culture. *LGBT Bioethics: Visibility, Disparities, and Dialogue, Special Report: Hastings Center Report*. 2014;44(5):48-52.
54. Sabin JA, Riskind RG, Nosek BA. Health care providers' implicit and explicit attitudes toward lesbian women and gay men. *Am J Public Health*. 2015;105(9):1831-1841.
55. Lim F, Johnson M, Eliason M. A national survey of faculty knowledge, experience, and readiness for teaching lesbian, gay, bisexual, and transgender health in baccalaureate nursing programs. *Nurs Educ Perspect*. 2015;36:144-152.
56. Unger CA. Care of the transgender patient: a survey of gynecologists' current knowledge and practice. *J Womens Health*. 2015;24(2):114-119.
57. Obedin-Maliver J, Goldsmith ES, Stewart L, et al. Lesbian, gay, bisexual, and transgender-related content in undergraduate medical education. *JAMA*. 2011;306(9):971-977.
58. Duncan DT, Hatzenbuehler ML. Lesbian, gay, bisexual, and transgender hate crimes and suicidality among a population-based sample of sexual-minority adolescents in Boston. *Am J Public Health*. 2014;104(2):272-278.
59. Eliason MJ, Ingraham N, Fogel SC, et al. A systematic review of the literature on weight in sexual minority women. *Womens Health Issues*. 2015;25(2):162-175.
60. Jun HJ, Corliss HL, Nichols LP, Pazaris MJ, Spiegelman D, Austin SB. Adult body mass index trajectories and sexual orientation. *Am J Prevent Med*. 2012;42(4):348-354.
61. Ward BW, Dahlhamer JM, Galinsky AM, Joestl SS. Sexual orientation and health among U.S. adults: National Health Interview Survey, 2013. *Natl Health Stat Rep*. 2014;77:1-10.
62. Simoni JM, Smith L, Oost KM, Lehavot K, Fredriksen-Goldsen K. Disparities in physical health conditions among lesbian and bisexual women: a systematic review of population-based studies. *J Homosex*. 2017;64(1):32-44.
63. Clark CJ, Borowsky IW, Salisbury J, et al. Disparities in long-term cardiovascular disease risk by sexual identity: the national longitudinal study of adolescent to adult health. *Prevent Med*. 2015;76:26-30.
64. Marrazzo, JM, Koutsky LA, Kiviat NB, Kuypers JM, Stine, K. Papanicolaou test screening and prevalence of genital human papillomavirus among women who have sex with women. *Am J Public Health*. 2001;91(6):947-952.
65. Wood SM, Salas-Humara C, Dowshen NL. Human immunodeficiency virus, other sexually transmitted infections, and sexual and reproductive health in lesbian, gay, bisexual, transgender youth. *Pediatr Clin North Am*. 2016;63(6):1027-1055.
66. Muzny CA, Austin EL, Harbison, HS, Hook EW. Sexual partnership characteristics of African American women who have sex with women: impact on sexually transmitted infection risk. *Sex Transm Dis*. 2014;41(10):611-617.
67. Gorgos LM, Marrazzo JM. Sexually transmitted infections among women who have sex with women. *Clin Infect Dis*. 2011;53(suppl 3):S84-S91.
68. Singh D, Fine DN, Marrazzo JM. *Chlamydia trachomatis* infection among women reporting sexual activity with women screened in family planning clinics in the Pacific Northwest, 1997 to 2005. *Am J Public Health*. 2011;101(7):1284-1290.
69. Clark H, Babu AS, Wiewel EW, Opoku J, Crepez N. Diagnosed HIV infection in transgender adults and adolescents: results from the National HIV Surveillance System, 2009–2014. *AIDS Behavior*. 2017;21(9):2774-2783.
70. Hayes V, Blondeau W, Bing-You RG. Assessment of medical student and resident/fellow knowledge, comfort, and training with sexual history taking in LGBTQ patients. *Fam Med*. 2015;47(5):383-388.
71. Reisner SL, White JM, Mayer KH, Mimiaga MJ. Sexual risk behaviors and psychosocial health concerns of female-to-male transgender men screening for STDs at an urban community health center. *AIDS Care*. 2014;26(7):857-864.
72. Ahmed O, Jindasurat C. *Lesbian, Gay, Bisexual, Transgender, Queer and HIV-Affected Hate Violence 2013*.

- New York, NY: National Coalition of Anti-Violence Programs; 2014.
73. Human Rights Campaign, Trans People of Color Coalition. *A Time to Act: Fatal Violence Against Transgender People in America 2017*. Washington, DC: Human Rights Campaign & Trans People of Color Coalition; 2017.
 74. Nolan JJ, Haas SM, Turley E, Stump J, LaValle CR. Assessing the “statistical accuracy” of the national incident-based reporting system hate crime data. *Am Behav Sci*. 2015;59(12):1562-1587.
 75. Human Rights Campaign. *Violence Against the Transgender Community in 2016*. Washington, DC: Human Rights Campaign; 2016.
 76. Kosciw JG, Greytak EA, Gíg NM, Villenas C, Danischewski DJ. *The 2015 National School Climate Survey: The Experience of Lesbian, Gay, Bisexual, Transgender, and Queer Youth in Our Nation’s Schools*. New York, NY: GLSEN; 2016.
 77. United Nations. Glossary on sexual exploitation and abuse. October 5, 2016. Available at: <https://hr.un.org/sites/hr.un.org/files/UN%20Glossary%20on%20SEA.pdf>. Accessed January 16, 2018.
 78. National Center for Victims of Crime, National Coalition of Anti-Violence Programs. *Why It Matters: Rethinking Victim Assistance for Lesbian, Gay, Bisexual, Transgender, and Queer Victims of Hate Violence and Intimate Partner Violence*. Washington, DC: National Center for Victims of Crime & National Coalition of Anti-Violence Programs; 2010.
 79. Walters ML, Chen J, Breiding MJ. *The National Intimate Partner and Sexual Violence Survey (NISVS): 2010 Findings on Victimization by Sexual Orientation*. Atlanta, GA: National Center for Injury Prevention and Control & Centers for Disease Control and Prevention; 2013. Available at: <http://doi.org/10.1037/e541522013-001>. Accessed January 8, 2017.
 80. American College of Obstetricians and Gynecologists. Committee Opinion No. 518: intimate partner violence. *Obstet Gynecol*. 2012;119:412-417.
 81. Centers for Disease Control and Prevention. The National Intimate Partner and Sexual Violence Survey. September 25, 2017. Available at: <https://www.cdc.gov/violenceprevention/nisvs/index.html>. Accessed January 18, 2018.
 82. Brownridge DA, Taillieu TL, Tyler KA, Tiwari A, Chan KL, Santos SC. Pregnancy and intimate partner violence: risk factors, severity, and health effects. *Violence Against Women*. 2011;17(7):858-881.
 83. Cheng D, Horon IL. Intimate-partner homicide among pregnant and postpartum women. *Obstet Gynecol*. 2010;115:1181-1186.
 84. Donovan BM, Spracklen CDN, Schweizer ML, Ryckman KK, Saftlas AF. Intimate partner violence during pregnancy and the risk for adverse infant outcomes: a systematic review and meta-analysis. *BJOG*. 2016;123(8):1289-1299.
 85. El Kady DE, Gilbert WM, Xing G, Smith LH. Maternal and neonatal outcomes of assaults during pregnancy. *Obstet Gynecol*. 2005;105:357-363.
 86. American College of Obstetricians and Gynecologists. Committee Opinion No. 554: reproductive and sexual coercion. *Obstet Gynecol*. 2013;121(2 pt 1):411-415.
 87. Clark LE, Allen RH, Goyal V, Raker C, Gottlieb AS. Reproductive coercion and co-occurring intimate partner violence in obstetrics and gynecology patients. *Am J Obstet Gynecol*. 2014;210(1):42-e1.
 88. Reilly PR. Eugenics and involuntary sterilization: 1907–2015. *Annu Rev Genomics Hum Genet*. 2015;16:351-368.
 89. Sperlich M, Seng JS, Li Y, Taylor J, Bradbury-Jones C. Integrating trauma-informed care into maternity care practice: conceptual and practical issues. *J Midwifery Womens Health*. 2017;62(6):661-672.
 90. Declercq E. Midwife attended births in the United States 1990–2012. *J Midwifery Womens Health*. 2015;60(1):10-15.
 91. U.S. Department of Health and Human Services. National CLAS standards. Available at: <https://www.thinkculturalhealth.hhs.gov/clas>. Accessed January 20, 2018.
 92. Betancourt JR, Green AR, Carrillo JE, Ananeh-Firempong O. Defining cultural competence: a practical framework for addressing racial/ethnic disparities in health and health care. *Public Health Rep*. 2003;118(4):293-302.
 93. Horvat L, Horey D, Romios P, Kis-Rigo J. Cultural competence education for health professionals. *Cochrane Database Syst Rev*. 2014;5:CD009405. doi:10.1002/14651858.CD009405.pub2.
 94. Malat J. The appeal and problems of a cultural competence approach to reducing racial disparities. *J Gen Intern Med*. 2013;28(5):605-607.
 95. Tervalon M, Murray-García J. Cultural humility versus cultural competence: a critical distinction in defining physician training outcomes in multicultural education. *J Health Care Poor Underserved*. 1998;9(2):117-125.
 96. Hansen H, Metz J. Structural competency in the U.S. healthcare crisis: putting social and policy interventions into clinical practice. *J Bioethical Inquiry*. 2016;13(2):179-183.
 97. Centers for Disease Control and Prevention. Strategies for reducing health disparities: selected CDC sponsored interventions—United States 2014. *MMWR Suppl*. 2014;63(1):1-47.
 98. McGlade MS, Saha S, Dahlstrom ME. The Latina paradox: an opportunity for restructuring prenatal care delivery. *Am J Pub Health*. 2004;94:2062-2065.

99. Chin MH, Clarke AR, Nocon RS, et al. A roadmap and best practices for organizations to reduce racial and ethnic disparities in health care. *J Gen Intern Med.* 2012;27(8):992-100
100. Council on Patient Safety in Women's Health Care Alliance for Innovation on Maternal Health. Patient safety bundle: reduction of peripartum racial/ethnic disparities. Available at: <http://safehealthcareforeverywoman.org/wp-content/uploads/2017/11/Reduction-of-Peripartum-Disparities-Bundle.pdf>. Accessed January 16, 2018.
101. U.S. Department of Health and Human Services. The rationale for diversity in the health professions: a review of the evidence. 2006. Available at: <http://anyflip.com/vhdl/blku/basic>. Accessed January 18, 2018.
102. Butler AS, Bristow LR, eds. *In the Nation's Compelling Interest: Ensuring Diversity in the Health Care Workforce*. Washington, DC: National Academies Press; 2004.
103. Fullerton J, Sipe TA, Hastings-Tolsma M, et al. The midwifery workforce: ACNM 2012 and AMCB 2013 core data. *J Midwifery Womens Health.* 2015;60(6):751-761.
104. Wren Serbin J, Donnelly E. The impact of racism and midwifery's lack of racial diversity: a literature review. *J Midwifery Womens Health.* 2016;61(6):694-706.
105. Ortiz FM. History of midwifery in New Mexico: partnership between *curandera-parteras* and the New Mexico Department of Health. *J Midwifery Womens Health.* 2005;50:411-417.
106. Smith MC, Holmes LJ. *Listen to Me Good: The Story of an Alabama Midwife*. Columbus, OH: Ohio State University Press; 1996.
107. Morrison SM, Fee E. Nothing to work with but cleanliness: the training of African American traditional midwives in the South. *Am J Public Health.* 2010;100:238-239.
108. Ogburn JA, Espey E, Pierce-Bulger M, et al. Midwives and obstetricians-gynecologists collaborating for Native American women's health. *Obstet Gynecol Clin North Am.* 2012;39:359-366.

3A

Reproductive Health Statistics

MARY C. BRUCKER, TEKOA L. KING

The editors acknowledge Nancy Jo Reedy and Esther Ellsworth Bowers for contributions to this appendix.

Maternal and infant mortality statistics are used extensively to document trends in health status and the results of therapeutic interventions at the population level. These statistics are also used extensively in healthcare research and by governments and institutions worldwide when deciding where to dedicate resources. In the United States, data on births, deaths, and fetal deaths are collected by each state or jurisdiction and reported as vital statistics to the National Center for Health Statistics. The National Vital Statistics System is a partnership between the federal government, 50 states, 2 cities (Washington, DC, and New York City), and 5 territories (Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands). The states and territories have the legal responsibility to register vital events. Although most jurisdictions use the standard U.S. forms for birth and death data, some variations are apparent between states and territories with regard to which data are collected. Thus, the data collected are not completely uniform across all jurisdictions.

Health statistics are an accepted measure of the effectiveness of a healthcare system and widely used as indicators of a nation's health. Mortality statistics also illustrate how pregnant women and newborns fare both internationally and within the United States. There are striking differences in mortality and morbidity statistics between the United States, other developed nations, and low-resource nations. Within the United States, there are notable racial and ethnic disparities in maternal and infant health outcomes. This appendix briefly reviews definitions of health-related statistics and how they are used. Definitions of key

reproductive statistics are presented in [Table 3A-1](#).¹⁻³ The most recent infant mortality, fetal death, and pregnancy-related mortality ratios are presented in [Table 3A-2](#)³⁻⁵ and [Figure 3A-1](#).⁶

Infant Mortality

In 2014, the overall infant mortality rate (IMR) in the United States was 6 infant deaths per 1000 live births.⁴ However, the IMR varies by geographic location and race/ethnicity and is highest among non-Hispanic blacks ([Table 3A-2](#)).^{3-5,7} The most common causes of infant death are congenital anomalies, preterm birth or low birth weight, maternal complications of pregnancy, sudden infant death syndrome (SIDS), and unintentional injuries.

The IMR has historically been used as an indicator of the health of a population because the health of infants in the first year of life is heavily dependent on factors such as maternal health, quality of health care, socioeconomic conditions (e.g., nutrition, education, wealth), and public health practices (e.g., sanitation, preventive health services).⁸ Despite spending larger amounts of money on healthcare services than many other countries, the United States ranks 26th among developed nations, with an IMR that is approximately twice as high as most other developed nations.

The reasons that the IMR in the United States remains high despite higher levels of healthcare spending are complex and not fully understood. International comparisons have found that the higher IMR can be largely attributed to increased rates of preterm birth and higher death rates in infants born after 37 weeks' gestation.⁸

Table 3A-1 Selected Maternal/Child Health Indices	
Term	Definition and Explanations
Fetal death rate (see Stillbirth)	<p>Spontaneous death of the fetus occurs prior to birth, irrespective of the duration of the pregnancy.</p> <p>Fetal death is indicated by no signs of life after birth (e.g., heartbeats, umbilical cord pulsations, breathing, or voluntary muscle movement).</p> <p>The fetal death rate is the number of fetal deaths \geq 20 weeks' gestation that occur during a year divided by the sum of live births plus fetal deaths during the same year, and expressed per 1000 live births plus fetal deaths.</p>
Infant mortality rate (IMR)	Number of infants dying before reaching 1 year of life per 1000 live births in a given year.
Lifetime risk of maternal death or pregnancy-related death	Risk of an individual woman dying from pregnancy or childbirth during her life; calculated by multiplying the maternal mortality rate by 30, or the number of years of exposure to pregnancy between ages 15 and 44. Calculations are based on maternal mortality and fertility rates in the country. This method recognizes that women of high fertility or women lacking in universal access to effective family planning have an extremely high risk of dying as a result of pregnancy or childbirth, as they are repeatedly exposed to the risk of pregnancy.
Live birth	Complete expulsion or extraction of a product of human conception from a woman, irrespective of the duration of pregnancy. The newborn shows any evidence of life (ie, heartbeats, umbilical cord pulsations, breathing, or voluntary muscle movement), regardless of whether the umbilical cord has been cut or the placenta is attached. Heartbeats are distinguished from transient cardiac contractions and breathing is distinguished from fleeting respiratory efforts or gasps.
Maternal mortality rate	An estimate of the number of deaths during pregnancy or within 42 days after completion of the pregnancy, per 100,000 women of reproductive age in a given year. This rate is difficult to obtain and often not used in low-resource countries, since births are more easily measured than the number of women of reproductive age.
Maternal mortality ratio	An estimate of the number of deaths during pregnancy within 42 days after completion of the pregnancy, for every 100,000 live births. This ratio is the method most commonly used to express trends within a country and to make international comparisons. Note: The maternal mortality <i>ratio</i> differs from the maternal mortality <i>rate</i> in that the denominator is births and not women of reproductive age. The rate is more difficult to measure, especially in countries with less sophisticated data gathering.
Neonatal mortality rate	The number of deaths of newborns in the first 28 days of life per 1000 live births.
Neonatal death rate (early versus late)	<p>Early neonatal deaths are the number of neonatal deaths that occur before the first 7 days from birth.</p> <p>Late neonatal deaths are the number of neonatal deaths that occur between 7 and 27 days of age.</p>
Perinatal mortality rate ^a (PMR)	The sum of fetal deaths (more than 20 weeks' gestation) plus early neonatal deaths (within the first 28 days after birth) during a year divided by the sum of live births plus fetal deaths during that year. Expressed per 1000 live births plus fetal deaths.
Pregnancy-associated death	<p>Death of a person occurring during or within 1 year of pregnancy but not causally related to pregnancy.</p> <p>This definition contrasts with that of "not pregnancy-associated death"—that is, death of a person with a uterus who has never been pregnant or occurring more than 1 year after the end of pregnancy.</p> <p>Reported as the pregnancy-related mortality ratio: pregnancy-related deaths per 100,000 live births.</p>

(continues)

Term	Definition and Explanations
Pregnancy-related death	Death of a person while pregnant or within 1 year of the end of a pregnancy—regardless of the outcome, duration, or site of the pregnancy—from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes. This includes a pregnancy complication, a chain of events initiated by pregnancy, or the aggravation of an unrelated condition by the physiologic effects of pregnancy.
Stillbirth	Fetal death that occurs \geq 20 weeks' gestation

^a There are several definitions of perinatal death rate in use today, including neonatal deaths within 7 days or within 28 days after birth; others use fetal deaths occurring with a gestation of more than 28 weeks.

Based on World Health Organization. Health statistics: maternal mortality ratio. Available at: <http://www.who.int/healthinfo/statistics/indmaternalmortality/en/>. Accessed December 18, 2017¹; World Health Organization. *ICD-10 International Statistical Classification of Diseases and Related Health Problems*. Geneva, Switzerland: World Health Organization; 2011²; Centers for Disease Control and Prevention. Pregnancy Mortality Surveillance System. November 9, 2017. Available at: <https://www.cdc.gov/reproductivehealth/maternalinfanthealth/pmss.html>. Accessed January 19, 2018.³

Race/Ethnicity	Infant Mortality Rate: <i>n</i> /1000 Live Births ^a	Fetal Mortality Rate: <i>n</i> /1000 Live Births and Fetal Deaths ^b	Pregnancy-Related Mortality Ratio ^c : <i>n</i> /100,000 Live Births
Non-Hispanic black	11.37	10.53	43.5
American Indian/Native American	8.3	6.2	14.4 ^d
Hispanic	5.0	5.22	14.4 ^d
Non-Hispanic white	4.9	4.88	12.7
Asian/Pacific Islander	4.2	4.68	14.4 ^d
Total	6	5.96	17.3

^a 2014.

^b 2013.

^c 2011–2013.

^d The pregnancy-related mortality ratio is aggregated for all races excluding non-Hispanic black and non-Hispanic white.

Based on Centers for Disease Control and Prevention. Pregnancy Mortality Surveillance System. November 9, 2017. Available at: <https://www.cdc.gov/reproductivehealth/maternalinfanthealth/pmss.html>. Accessed January 19, 2018³; Centers for Disease Control and Prevention. Infant health: protecting our next generation at a glance 2016. Available at: <https://www.cdc.gov/chronicdisease/resources/publications/aag/infant-health.htm>. Accessed January 20, 2018⁴; MacDorman MF, Gregory EC. Fetal and perinatal mortality: United States, 2013. *Natl Vital Stat Rep*. 2015;64(8):1-10.⁵

The most modifiable etiology is likely preterm birth.⁵ Many studies have explored strategies designed to decrease the risk of preterm birth, including investigation of environmental epigenetics, suggesting that improving social determinants of health can directly affect perinatal outcomes.⁹ Methods for lowering the rate of preterm birth include interventions such as increasing breastfeeding rates, offering more parental support and education, and improving access to healthcare services.

Fetal Death and Stillbirth

States have different reporting requirements for fetal death. Most report fetal deaths that are 20 weeks' gestation or greater and/or 350 grams or greater birth weight, and use 20 weeks' gestation as the gestational age threshold for distinguishing a stillbirth from the product of a miscarriage. A few states report all pregnancy losses as a fetal death regardless of the period of gestation. The fetal death rate in the United States is approximately the same as the IMR, at 5.96 fetal deaths

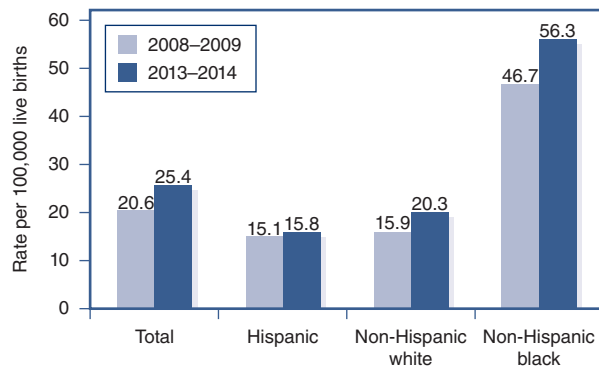


Figure 3A-1 Maternal mortality rates by race and ethnicity, 27 states and Washington, DC, 2008–2009 and 2013–2014. Reproduced with permission from MacDorman MF, Declercq E, Thomas ME. Trends in maternal mortality by sociodemographic characteristics and cause of death in 27 states and the District of Columbia. *Obstet Gynecol.* 2017;129(5):811-818.⁶

after 20 weeks’ gestation per 1000 live births and fetal deaths combined (denominator). The incidence varies by race/ethnicity and is highest in non-Hispanic blacks.

Maternal Mortality

Maternal deaths are evaluated by three different systems in the United States.¹⁰ The National Vital Statistics System reports the maternal mortality rate and ratio based on death certificates using the World Health Organization’s International Classification of Disease codes. These statistics do not generate detailed data about the proximate cause of death. The Pregnancy Mortality Surveillance System within the Centers for Disease Control and Prevention (CDC) monitors pregnancy-related and pregnancy-associated deaths via a more complex analysis of death certificates, birth certificates, and pregnancy data that are recorded on both. These statistics generate more detailed data about the causes of death. The third source of information comes from maternal mortality review committees that analyze pregnancy-related deaths in more detail at the local level.

Maternal mortality is much less common than infant or fetal death and is reported as a number per 100,000 live births. A single woman dying in childbirth is a tragedy; an increase in the number of women dying is a societal catastrophe and national embarrassment. Despite advances in standard of living and healthcare technology, the number of women who die from a pregnancy-related cause has increased in the United States from 7.2 deaths per 100,000 live births in 1987 to a high of 17.3 deaths per 100,000 live births in 2013.³ The maternal mortality rate in

non-Hispanic black women is three times higher than that in non-Hispanic white women (40.2 versus 14.1 maternal deaths per 100,000 live births), which is one of the most striking perinatal health disparities in the United States today.¹¹ Today the United States ranks 60th in the world, with a maternal mortality rate that is higher than that of all other developed nations.¹² It is estimated that approximately 50% of the U.S. maternal deaths are preventable.¹³

Historically, the most common causes of maternal mortality were hemorrhage, infection, hypertension, and anesthesia complications. As the prepregnancy health status of childbearing women has changed over time, so have the causes of mortality and morbidity. The most common direct causes of pregnancy-related death during 2011–2013 are listed in **Table 3A-3**.³ Receiving care at an appropriate site may ameliorate risks for an individual, but problems of poverty, access, and insurance can result in women not obtaining the care needed. Specific factors that are associated with an increased maternal mortality ratio include four or fewer prenatal visits, unintended births, cesarean births, unmarried status, and percentage of black women giving birth within a state.¹¹ The last factor illustrates a continuing challenge associated with racial and ethnic health disparities in the United States.

Cause	Percentage of Pregnancy-Related Deaths
Cardiovascular diseases	15.5%
Noncardiovascular diseases (includes drug overdose)	14.5%
Infection or sepsis	12.7%
Hemorrhage	11.4%
Cardiomyopathy	11.0%
Thrombotic pulmonary embolism	9.2%
Hypertensive disorders of pregnancy	7.4%
Cerebrovascular accidents	6.6%
Amniotic fluid embolism	5.5%
Anesthesia complications	0.1%

Based on Centers for Disease Control and Prevention. Pregnancy Mortality Surveillance System. November 9, 2017. Available at: <https://www.cdc.gov/reproductivehealth/maternalinfanthealth/pmss.html>. Accessed January 19, 2018.³

The Rising Trend of Maternal Mortality in the United States

Multiple studies have attempted to identify the reasons for the rising incidence of maternal death in the United States. Initially, the increase was deemed temporary and associated with changes in birth certificates, categorization of causes of death, or other record keeping issues.^{14,15} Nevertheless, the data collection factors do not explain changes in specific states. For example, the MMR doubled within a 2-year period in one state; such a rise was unexpected in the absence of war, natural disaster, or severe economic disaster.¹⁵ This state and others have now initiated maternal mortality review boards, frequently including midwives as board members, to directly examine records of women who have died. Such groups are not universally available across the country, however.¹³

Prominent among the potential etiologies of pregnancy-related deaths is the fact that care of pregnant women varies dramatically across the country. In many developed countries, best practices are shared and followed regardless of birth site. In the United States, there is no standard approach to treatments for complications of pregnancy or management of women experiencing an emergency in childbirth. This problem is currently the focus of many policy initiatives. For example, the California Maternal Quality Care Collaboration developed “bundles” or standard practice protocols that were disseminated throughout the state on topics such as postpartum hemorrhage.¹⁶ Studies found that adoption of such bundles was associated with decreases in maternal deaths, prompting the design of the National Partnership for Maternal Safety’s

bundles, which include one on managing obstetric hemorrhage.^{13,17} These practice guidelines are a good example of how statistics drives research that first affects policy and then is translated into clinical practice.

Maternal Morbidity

Maternal morbidity is much more common than maternal mortality. As difficult as it is to obtain accurate maternal mortality data, however, morbidity data collection is even more elusive. Mortality data measure a single event or incidence. Morbidity data, by comparison, are much less likely to be recorded, suffer from a lack of standard case definitions, and frequently involve several comorbidities (e.g., an individual with multiple conditions such as severe anemia, vesico-vaginal fistula, repeated urinary tract infections, and clinical depression).

Near-miss maternal mortality is a life-threatening event that could result in death. Recent efforts to define and track near-misses have been proliferating as a method to further assess the quality of health care and the effectiveness of interventions.¹⁸ Early warning criteria are being instituted as part of patient safety bundles in an effort to decrease the incidence of maternal morbidity.¹⁸

Reproductive Health: The Global Picture

Although pregnancy-related deaths in the United States are a critical concern nationally, approximately 99% of maternal deaths occur in low-resource nations, as shown in **Table 3A-4**.¹⁹ It is difficult to

Region	MMR: <i>n</i> /100,000 Live Births	Range of MMR Uncertainty		Number of Maternal Deaths ^a	Lifetime Risk of Maternal Death: 1/ <i>n</i>
		Lower Estimate	Upper Estimate		
World	210	160	290	289,000	190
Developed regions	16	12	23	2300	3700
Developing regions	230	180	320	286,000	160

Abbreviation: MMR, maternal mortality ratio.

^a The MMR, number of maternal deaths, and lifetime risk have been rounded according to the following scheme: < 100, no rounding; 100–999, rounded to nearest 10; 1000–9999, rounded to nearest 100; and > 10,000, rounded to nearest 1000.

Data from World Health Organization, United Nations Children’s Fund, United Nations Population Fund, The World Bank, United Nations Population Division. Trends in maternal mortality: 1990 to 2013. Available at: <http://www.who.int/reproductivehealth/publications/monitoring/maternal-mortality-2013/en/>. Accessed December 12, 2017.¹⁹

compare maternal mortality ratios across nations because of inconsistency in definitions and reporting. On a worldwide basis, many women never enter the healthcare system during pregnancy, even when gravely ill, and, therefore, deaths and disabilities are not well captured in vital statistics, surveillance data, or other records. Because the maternal mortality rate is difficult to obtain, the *ratio* is used more frequently. When comparing countries, the maternal mortality ratio is the number of maternal deaths per 100,000 live births in a given period of time.

Global Factors Associated with Maternal Mortality

The most common causes of maternal mortality in low-resource nations are hemorrhage, infection, hypertension, complications during birth, and unsafe abortion.¹⁹ Betrán et al. reported findings of a systematic review of maternal mortality in 141 countries in 2005.²⁰ Using standard regression models, these authors found that (1) the proportion of births assisted by a skilled attendant, (2) the infant mortality rate, and (3) national per capita expenditures on health were three factors strongly related to maternal mortality worldwide.²⁰

In addition, a phenomenon known as the “three delays” has been identified as a critical determinant of maternal mortality. Once an emergency occurs in childbirth, its cause can be analyzed within the following framework, whose elements collectively prevent timely, high-quality care from reaching those most in need:

1. Delay in recognizing there is a problem and making the decision to seek care
2. Delay in reaching the appropriate level of care once the problem or complication has been recognized
3. Delay in receiving the appropriate care after arrival at the service site

The Safe Motherhood Initiative

In an effort to address some of the global factors involved in maternal and infant mortality, the Safe Motherhood Initiative held its first meeting in 1987 in Africa.²¹ Another group that was organized a few years later but has similar goals is the White Ribbon Alliance. The White Ribbon Alliance includes many of the same members as the Safe Motherhood group, but is more broad based and includes international nongovernmental organizations (INGOs), government agencies, local nongovernmental organizations (NGOs), and community-based organizations in

Table 3A-5 Safe Motherhood Action Messages

Advance safe motherhood through human rights
Empower women, ensure choices
Safe motherhood is a vital economic and social investment
Delay marriage and first birth
Every pregnancy faces risks
Ensure skilled attendance at delivery
Improve access to quality reproductive health services
Prevent unwanted pregnancy and address unsafe abortion

Reproduced with permission from Safe Motherhood action messages. Available at: <http://www.safemotherhood.org>. Accessed December 12, 2017.²²

resource-limited countries. The general goals of the alliance members are to promote practices, protocols, and guidelines that facilitate women obtaining high-quality gynecologic, family planning, prenatal, delivery, and postpartum care, so as to achieve optimal health for the mother, fetus, and infant during the perinatal period. Although the emphasis has been on low-resource countries, the action messages posted on the Safe Motherhood website can be of value to all countries, including the United States (Table 3A-5).²²

Conclusion

There are multiple complexities involved in the definition, collection, and reporting of vital statistics that make it difficult to rely on exact numbers. Nonetheless, trends in these numbers tell a powerful story. The United States spends more on health care than any other nation in world, and the IMR has decreased in recent years. Yet, the IMR in the United States remains higher than that in many other developed nations, maternal mortality and morbidity are increasing, and racial/ethnic disparities in maternal-child health are striking.

The link between national vital statistics and clinical care of individuals may seem remote but, in fact, these statistics play an important role in each clinical encounter. The underlying etiologies of morbidity and mortality are both social and biologic in nature and, in turn, midwifery care of each woman must address social determinants of health as well as biologic indicators. Midwifery has a long and storied history of providing such care internationally, and today's midwives are charged with continuing that care.

Resources

Organization	Description	Webpage
Cornell University Library	"Finding Health Data and Statistics: Reproductive and Family Health."	http://guides.library.cornell.edu/c.php?g=241897&p=1608216
Lancet Series on Midwifery, June 23, 2014	Special issue of <i>Lancet</i> that focuses on the needs of childbearing families internationally and the role of midwives.	http://www.thelancet.com/series/midwifery

References

- World Health Organization. Health statistics: maternal mortality ratio. Available at: <http://www.who.int/healthinfo/statistics/indmaternalmortality/en/>. Accessed December 18, 2017.
- World Health Organization. *ICD-10 International Statistical Classification of Diseases and Related Health Problems*. Geneva, Switzerland: World Health Organization; 2011.
- Centers for Disease Control and Prevention. Pregnancy Mortality Surveillance System. November 9, 2017. Available at: <https://www.cdc.gov/reproductivehealth/maternalinfanthealth/pmss.html>. Accessed January 19, 2018.
- Centers for Disease Control and Prevention. Infant health: protecting our next generation at a glance 2016. Available at: <https://www.cdc.gov/chronicdisease/resources/publications/aag/infant-health.htm>. Accessed January 20, 2018.
- MacDorman MF, Gregory EC. Fetal and perinatal mortality: United States, 2013. *Natl Vital Stat Rep*. 2015;64(8):1.
- MacDorman MF, Declercq E, Thomas ME. Trends in maternal mortality by sociodemographic characteristics and cause of death in 27 states and the District of Columbia. *Obstet Gynecol*. 2017;129(5):811-818.
- MacDorman MF. Race and ethnic disparities in fetal mortality, preterm birth, and infant mortality in the United States: an overview. *Semin Perinatol*. 2011;35(4):200-208.
- MacDorman MF, Mathews TJ, Mophangoo AD, Zeitlin J. International comparisons of infant mortality and related factors: United States and Europe, 2010. *Nat Vital Stat Rep*. 2014;63(5):1-10.
- Vick AD, Burris HH. Epigenetics and health disparities. *Curr Epidemiol Rep*. 2017;4(1):31-37.
- St Pierre A, Zaharatos J, Goodman D, Callaghan WM. Challenges and opportunities in identifying, reviewing, and preventing maternal deaths. *Obstet Gynecol*. 2018;131:138-142.
- Moaddab A, Dildy GA, Brown HL, et al. Health care disparity and state-specific pregnancy-related mortality in the United States, 2005–2014. *Obstet Gynecol*. 2016;128:869-875.
- Neggers YH. Trends in maternal mortality in the United States. *Reprod Toxicol*. 2016;64:72-76.
- Main EK, McCain CL, Morton CH, Holtby S, Lawton ES. Pregnancy-related mortality in California: causes, characteristics, and improvement opportunities. *Obstet Gynecol*. 2015;125:938-947.
- Joseph KS, Lisonkova S, Muraca GM, et al. Factors underlying the temporal increase in maternal mortality in the United States. *Obstet Gynecol*. 2017;129(1):91-100.
- MacDorman MF, Declercq E, Cabral H, Morton C. Recent increases in the U.S. maternal mortality rate: disentangling trends from measurement issues. *Obstet Gynecol*. 2016;128(3):447-455.
- Main EK, Goffman D, Scavone BM, et al. National Partnership for Maternal Safety consensus bundle on obstetric hemorrhage. *J Midwifery Womens Health*. 2015;60:458-464.
- Creanga AA, Syverson C, Seed K, Callaghan WM. Pregnancy-related mortality in the United States, 2011–2013. *Obstet Gynecol*. 2017;130(2):366-373.
- Mhyre JM, D’Oria R, Hameed AB, et al. The maternal early warning criteria: a proposal from the National Partnership for Maternal Safety. *Obstet Gynecol*. 2014;124:782-786.
- World Health Organization, United Nations Children’s Fund, United Nations Population Fund, The World Bank, United Nations Population Division. Trends in maternal mortality: 1990 to 2013. Available at: <http://www.who.int/reproductivehealth/publications/monitoring/maternal-mortality-2013/en/>. Accessed December 12, 2017.
- Betrán AP, Wojdyla D, Posner SF, Gülmezoglu AM. National estimates for maternal mortality: an analysis based on the WHO systematic review of maternal mortality and morbidity. *BMC Public Health*. 2005;12(5):131-143.
- Islam M. The Safe Motherhood Initiative and beyond. *Bull WHO*. 2007;85(10):735.
- Safe Motherhood action messages. Available at: <http://www.safemotherhood.org>. Accessed December 12, 2017.