Advisory Memorandum

To: U.S. Commission on Civil Rights
From: Colorado Advisory Committee to the U.S. Commission on Civil Rights
Date: September 22, 2020
Subject: Advisory Memorandum on Maternal Mortality and Fetal/Infant Mortality

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The Colorado State Advisory Committee to the United States Commission on Civil Rights (Committee), in support of the Committee's work on maternal mortality and fetal and infant mortality, held two mini-briefings in 2020.[1] In February, the Committee sought to learn about the current prevalence of maternal mortality in Colorado, the structure of Colorado's planned response through the Maternal Mortality Prevention Program and Review Committee and the effectiveness of current tracking and reporting mechanisms. In May, the Committee sought to learn about the current prevalence of fetal and infant mortality in Colorado, the effectiveness of current tracking and reporting mechanisms, and possible best practices and methods of combatting fetal and infant mortality in Colorado. This Advisory Memorandum summarizes the information the Committee learned at the briefings.[2]

Assertions and Themes from the February 5, 2020 Briefing

1. Public Awareness Can Drive Improvement.

As the public has grown increasingly aware of maternal mortality and its prevalence, it has demanded better of the healthcare system, the media has covered the issue in greater depth, and resource commitments have expanded.[3] Additionally, as awareness has increased, greater scrutiny has been focused on the underlying causes and disparities in maternal mortality.[4]

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[1] The Committee extends its appreciation to Shivani Bhatia, Maternal Health Manager of the Maternal Mortality Prevention Program in the Colorado Department of Health, for her presentation at the February briefing and to Gina Harris, Chief Executive Officer, and Missy Thomas of Now I Lay Me Down to Sleep, and Lindsey Wimmer, Executive Director of the Star Legacy Foundation, for their participation in the May briefing.

[2] The Advisory Committee adopted the Advisory Memorandum by unanimous vote on September 22, 2020. While this Advisory Memorandum accurately summarizes the presentations of the briefers, the Committee did not hear from other advocates or government officials who might have provided differing or supplement perspectives. The SAC did not review studies cited by the briefers and did not survey the relevant literature to discover whether there are other studies with different results or that might provide useful context to the studies that are cited. The Committee extends its appreciation to law student Joseph Holvey for his assistance in preparation of this Advisory Memorandum.

[3] Shavani Batya Testimony, Briefing before the Colorado Advisory Committee to the U.S. Commission on Civil Rights (hereinafter *Briefing*), February, 5, 2020, transcript p. 3.

[4] Ibid., 10.

Thus, policy continues to reflect the desire to improve maternal health outcomes.[5] This is seen in CDC-hosted meetings that discuss racial disparities in maternal healthcare and the formation of the Maternal Mortality Prevention Program and Review Committee in Colorado.[6] Public awareness of maternal mortality can drive significant improvement in maternal health outcomes.

2. State Goals

The vision of the Maternal Mortality Prevention Program and Review Committee is to eliminate preventable maternal deaths in Colorado, to reduce maternal mortality overall, and improve the population health for pregnant and postpartum people.[7] The Maternal Mortality Prevention Program and Review Committee identifies a separate mission that calls for increasing public awareness of maternal mortality and the associated issues, identifying interventions, and promoting systemic change to prevent and reduce maternal deaths.[8] Colorado averages 30-35 maternal deaths per year out of 65,000 births.[9]

To do this, the Maternal Mortality Prevention Program and Review Committee reviews every death that happens in Colorado.[10] This includes people who are in treated in Colorado but reside elsewhere.[11] In this review process, The Maternal Mortality Prevention Program and Review Committee collects every piece of information it can: autopsy reports, death certificates, police records, prenatal and medical records, behavioral health records, and other information, including whether the death was pregnancy-related or pregnancy-associated but not related (due to some factor other than the pregnancy itself or a chain of events related to it).[12] This information is then distilled to craft a picture of the individual to identify the relevant risk factors, racial and socioeconomic disparities, and causes to ultimately conclude whether or not the death was preventable.[13]

Once this information is compiled and considered by Maternal Mortality Prevention Program and Review Committee, it is used to identify where the healthcare system might have failed and where action may be needed in terms of preventability.[14] The entire review process is confidential, and it is continuously revised and improved to better improve the health outcomes of pregnant and post-partum individuals.[15]

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[5] Ibid.

[6] Ibid., 7, 16.

[7] Batya Testimony, PowerPoint Presentation (hereinafter PowerPoint) at slide 6. *See also* https://www.colorado.gov/pacific/cdphe/maternal-mortality

[8] Ibid.

[9] Batya Testimony, *Briefing*, transcript at p. 7.

[10] Ibid., 3.

[11] Ibid.

[12] Ibid, 4.

[13] Ibid.

[14] Ibid.

[15] Ibid., 5.

Ultimately, the goal is to eliminate preventable maternal deaths and reduce maternal deaths overall.[16] 2018 saw a drop from the overall average of 30-35 deaths per year to 15, but additional data is needed before declaring a trend.[17]

3. Racial, Identity, and Socioeconomic Disparities Exist.

Maternal mortality in Colorado disproportionately impacts Black women.[18] Black women account for around five percent of all births in Colorado but make up around ten percent of all maternal deaths.[19] This is due to the disparity in medical treatment that Black women – and Black patients in general – receive.[20] According to testimony, Black women in emergency rooms are more likely to have their pain dismissed as non-serious, and Black babies are less likely than their white counterparts to receive a high level of care.[21]

People who live in rural communities/areas are also disproportionately impacted by maternal mortality.[22] Around twelve percent of Colorado's total population lives in a rural area, yet that same group makes up about eighteen percent of total maternal deaths.[23] This is largely due to the distance people in rural areas must travel and the time it takes to receive care.[24] That results in a delay of access to care that can change a health outcome.[25]

Additionally, people who earn less than $15,000 per year constitute forty-five percent of maternal deaths in Colorado while only being twenty-six percent of the population.[26] This could be due to a lack of access to care due to high costs or other overlapping factors.[27]

4. Many Deaths are Preventable.

Around eighty percent of the maternal deaths reviewed in Colorado between 2008 and 2013 were found to have been preventable.[28] A death is preventable if the Maternal Mortality Prevention Program and Review Committee determines that there was at least

[16] Ibid., 3.

[17] Ibid., 7, 8.

[18] Ibid., p. 8; PowerPoint at slide 17.

[19] Batya Testimony, PowerPoint at slide 17.

[20] Batya Testimony, *Briefing*, transcript at p. 9.

[21] Ibid., p. 16.

[22] Batya Testimony, PowerPoint at slide 17.

[23] Ibid.

[24] Batya Testimony, *Briefing*, transcript at p. 10.

[25] Ibid.

[26] Batya Testimony, PowerPoint at slide 17.

[27] Batya Testimony, *Briefing*, transcript at p. 8.

[28] Batya Testimony, PowerPoint at slide 19.

some chance of averting the death by one or more reasonable changes to the patient, community, provider, facility, and/or systems factors or levels.[29]

An example of a patient-level change that could prevent a death is a spouse with access to Narcan who was present at the time of an accidental overdose.[30] In that scenario, if the spouse had access to Narcan, knew how to administer it, and was not afraid of a punitive outcome if medical help was sought then any of those changes may have prevented the death.[31]

If Narcan were widely available, support would be available for a person in this situation.[32] This would destigmatize addiction and aid in recovery.[33]

5. Fetal and Infant Mortality Overlap

Many of the same factors in maternal mortality are influential in fetal and infant mortality, as well.[34] Race and socioeconomic factors play a role in both issues, and trends in data are similar in each.[35]

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[29] Ibid. at slide 20; Batya Testimony, *Briefing*, transcript at p. 10.

[30] Batya Testimony, *Briefing*, transcript at p. 11.

[31] Ibid.

[32] Ibid.

[33] Ibid.

[34] Ibid., 15.

[35] Ibid.

6. Risk Factors

Risk factors for maternal mortality are numerous, and they are found at both the individual and system levels.[36]

Individual risk factors include smoking, poor nutrition, low physical activity, violence, drug use or alcohol abuse, risky sexual behavior, and chronic illnesses.[37] However, many other factors influence maternal mortality rates: a lack of access to secure housing, low-income levels or a lack of income, a lack of access to quality healthcare, race and ethnicity, immigration status, gender identity, and sexual orientation are all important variables to consider.[38]

Enhancing access to quality healthcare and nutrition, mental health services, housing, education for both adults and children, safe environments, and higher environmental quality are likely to lead to lower maternal mortality.[39]

7. Causes of Death

The leading causes of maternal deaths are mental health conditions, injuries, cancer, cardiovascular conditions, and infections.[40] Mental health conditions includes suicides and accidental overdoses, and injuries includes car accidents and homicides.[41]

Deaths due to mental health conditions are the most prevalent with injuries as the second leading cause, constituting twenty-five percent of the total deaths.[42] Cancer causes about eight percent of the total deaths.[43] Cardiovascular conditions cause about six and half percent, as do infections.[44]

Assertions and Themes from the May 22, 2020 Briefing

1. Indication of Nation's Health Status

Fetal and infant mortality is a public health issue and an indicator of a nation's health status.[45] There are over 45,000 babies born every year in the United States.[46] There are

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[36] Batya Testimony, PowerPoint at slide 23; Batya Testimony, *Briefing*, transcript at p. 12 and 13.

[37] Batya Testimony, *Briefing*, transcript at p. 12.

[38] Batya Testimony, PowerPoint at slide 23.

[39] Batya Testimony, *Briefing*, transcript at p. 13; Batya Testimony, PowerPoint at slide 24.

[40] Batya Testimony, PowerPoint at slide 14; Batya Testimony, *Briefing*, transcript at p. 8.

[41] Batya Testimony, *Briefing*, transcript at p. 8.

[42] Ibid.

[43] Ibid.

[44] Ibid.

[45] Lindsey Wimmer, Briefing Before the Colorado Advisory Committee to the U.S. Commission on Civil Rights (hereinafter *Briefing*), May 22, 2020, transcript p. 5, ¶5.

[46] Ibid.

significant racial disparities in infant mortality rates, as people of color suffer higher rates of mortality than the white population.[47]

Significantly, nearly 1 in 4 women will experience a pregnancy loss or infant death.[48] Seventy percent of those who do will develop depression, and around half of those who develop depression will have symptoms for at least four years.[49] Depression is not the only mental health condition that can develop, as one in six mothers will suffer from post-traumatic stress disorder.[50] Lastly, rates of divorce and separation are higher for women who experience a pregnancy loss or infant death.[51]

2. **National and State Goals**

In the United States, there are around 22,000 infant deaths per year, and in Colorado there are 298.[52] The Healthy People goal for 2020 is 6 deaths per 1,000 live births, and statistics from 2017 show both Colorado and the United States achieving this goal: the United States averaged 5.8 deaths for every 1,000 live births, and Colorado averaged 4.7 deaths.[53] For the United States, this was down from 6.75/1,000 live births in 2007.[54] Colorado is ranked eighth in the United States based upon these 2017 statistics.[55]

Healthy People's goal for 2020 for neonatal deaths is 4 per 1,000 live births, and Colorado is currently just above 4, so it is not yet meeting the goal for 2020.[56] The United States is just under 4 as a whole, so it is meeting that goal.[57]

For fetal mortality, Healthy People's goal for 2020 is 5.6 deaths per 1,000 live births.[58] In 2017, the United States averaged 5.9 deaths per 1,000 live births which is down from 6.2 in 2008, but it is still short of the goal.[59] Colorado averaged 5.6 in 2017 – right at the Healthy People goal for 2020 – but that number has risen since 2008 when Colorado averaged 5.1.[60]

3. **Racial Disparities Exist**

Despite the US and Colorado hitting the goals to reduce infant deaths, the numbers reveal disparities among people of color with Black women almost double the goal of 6 infant

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[47] Ibid., 6.

[48] Ibid., ¶1.

[49] Ibid., ¶2

[50] Ibid.

[51] Ibid.

[52] Ibid., 26.

[53] Ibid., 1, ¶5, p. 2, ¶7.

[54] Wimmer Testimony, PowerPoint Presentation (hereinafter *PowerPoint*) at slide 3.

[55] Wimmer Testimony, *Briefing*, transcript at p. 2, ¶7.

[56] Ibid., 3.

[57] Ibid., 1.

[58] Ibid., 2.

[59] Ibid.

[60] Ibid.

deaths per 1,000 live births.[61] In the United States, Black women feature the highest rate of infant mortality at around 11 deaths per every 1,000 live births.[62] These disparities are also present in the Native American and Pacific Islander communities that have rates of around 9 and 7 deaths per every 1,000 live births, respectively.[63]

In Colorado, these averages differ slightly. Black women fare significantly worse at around 13 deaths per every 1,000 live births, and Hispanic women also fare worse at around 8 deaths, which is nearly double the nationwide average.[64] Native American and Pacific Islander women in Colorado are slightly better than the groups' nationwide averages at just over 6 and just under 4 deaths per 1,000 live births, respectively.[65] Given the Hispanic population in Colorado, this rate is of significant concern.[66]

These trends are also seen in neonatal and post-neonatal deaths, as Black women suffer the highest rates at around 7.5 deaths per 1,000 live births for neonatal children and 4.5 for post-neonatal children.[67]

Fetal mortality also echoes these trends, as Black, Native American, and Hispanic women all suffer fetal mortality at rates that are either right on the 2020 goal or significantly higher.[68]

Racial disparities are also seen in the causes of death.[69] Black children are 3.8 times as likely as white children to die from low birth weight and related complications.[70] Black children also die over twice as often than white children from infant death syndrome.[71]

Moreover, this racial disparity extends into medical treatment of the mother. According to a Mothers National Childbearing Survey, twenty-one percent of Black women and nineteen percent of Hispanic women reported being treated poorly due to their race, ethnicity, cultural background, or language.[72] Poor treatment can lead to the poor mental health outcomes as discussed in section one above, and positive experiences are associated with lower grief intensity and shorter periods of coping.[73] Additionally, Black

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[61] Wimmer Testimony, *PowerPoint* at slide 4.

[62] Ibid.

[63] Ibid.

[64] Ibid., slide 5.

[65] Ibid.

[66] Wimmer Testimony, *Briefing*, transcript at p. 3

[67] Wimmer Testimony, *PowerPoint* at slide 8.

[68] Ibid., slides 13 and 14.

[69] Missy Thomas Testimony, Briefing Before the Colorado Advisory Committee to the U.S. Commission on Civil Rights (hereinafter *Briefing*), May 22, 2020, transcript at p. 10, ¶5.

[70] Ibid., ¶4.

[71] Ibid.

[72] Ibid., ¶2.

[73] Ibid., ¶3.

women are 2.3 times more likely to receive either late or no prenatal care as compared to white women.[74]

Lastly, racial disparities are also present in studies on causes of death.[75] The vast majority of studies primarily or exclusively consider white mothers and children.[76] This certainly leads to an evidentiary and explanatory bias. This bias is also present in bereavement care studies.[77]

4. **Gender Disparities Exist**

Gender disparities are present in the treatment of patients.[78] Male patients tend to have their pain taken more seriously than female patients, according to two studies cited in the briefing.[79] Healthcare providers were more likely to rate male patients as "autonomous and in control" while rating female patients as "hysterical, emotional, complaining, and fabricating the pain."[80]

Additionally, another study cited in the briefing found that women tend to wait thirty-three percent longer for help in an emergency room setting.[81] Disturbingly, women are also about seven times more likely than men to be misdiagnosed and discharged in the middle of a heart attack.[82]

These statistics demonstrate that women receive a lower level of care as compared to men, and this assuredly changes the likely health outcomes for their children.

5. **Risk Factors**

Risk factors run the gamut from personal-level determinants to systems-level issues.

Social determinants are perhaps the most all-encompassing, as they include both of the above. This group of risk factors includes low socioeconomic status, access to quality healthcare, the education level of the mother, suboptimal prenatal care (or none at all), as well as the presence of stress, a history of trauma, or current/ongoing trauma.[83] All of these factors influence health outcomes.

Other risk factors arise from during the pregnancy itself. For instance, IVF pregnancies are more likely to lead to adverse outcomes, as are multiple gestation pregnancies, and pregnancies where there have been alterations in fetal movement or fetal growth

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74 Ibid., ¶4.

75 Wimmer Testimony, *Briefing*, transcript at p. 16 and 17.

76 Ibid., 17.

77 Ibid., 17, ¶2.

78 Thomas Testimony, *Briefing*, transcript at p. 9, ¶5.

79 Ibid.

80 Ibid., ¶6.

81 Ibid., 10, ¶1.

82 Ibid.

83 Wimmer Testimony, *Briefing*, transcript at p. 4, ¶1; Wimmer Testimony, *PowerPoint* at slide 16.

restrictions.[84] Umbilical cord abnormalities and a variety of placental conditions also influence health outcomes, and the most common is placental insufficiency.[85]

Maternal health conditions also impact health outcomes for the child. Two of the most prominent are gestational diabetes and preeclampsia.[86] Autoimmune diseases are of significant concern both during the pregnancy and may lead to problems after birth.[87] Substance use or abuse, obesity, and maternal age may also effect health outcomes.[88] Maternal age can introduce complications at both ends of the spectrum: women under twenty and women over forty have significantly higher risk of poor health outcomes.[89] Additionally, women who previously experienced a poor outcome are more likely to suffer one again. Often these various factors overlap.[90]

6. **Causes of Death**

Causes of death vary based upon the developmental stage. For neonatal babies, the top causes of death are premature birth or low birth weight, birth defects, maternal pregnancy complications, placental issues or problems with the umbilical cord, or general infection.[91] These account for two-thirds of total infant mortality.[92]

For post-neonatal babies, the top causes of death are birth defects, sudden unexpected infant death or sudden infant death, unintentional injuries, cardiovascular disorders, and homicide.[93] These account for nearly one-third of all infant mortalities.[94] Additionally, these causes of death tend to track similarly for infant deaths.[95]

Lastly, many of the studies that have explored this draw from death reports.[96] Death reports are of questionable accuracy, as they may be amended later to reflect a change in information or may not be changed even when new information is acquired.[97]

Conclusion

As the Advisory Committee ends its appointment term, it submits this memorandum that summarizes the briefings held at the end of its term. This Advisory Memorandum accurately

[84] Wimmer Testimony, *Briefing*, transcript at p. 4, ¶1.

[85] Ibid*.*, ¶2.

[86] Ibid.

[87] Ibid.

[88] Ibid.

[89] Ibid.

[90] Ibid, ¶1.

[91] Ibid*.*, 2, ¶10; *PowerPoint* at slide 9.

[92] *PowerPoint* at slide 9.

[93] Wimmer Testimony, *Briefing*, transcript at p. 2, ¶10; *PowerPoint* at slide 7.

[94] *PowerPoint* at slide 7.

[95] Wimmer Testimony, *Briefing*, transcript at p. 2.

[96] Ibid*.*, 16, ¶8.

[97] Ibid., 16-17.

summarizes the presentations of the briefers, but the Committee has conducted no independent investigation. Accordingly, this Advisory Memorandum is a starting point for further inquiry into a very important issue, but it is not sufficient for any policy recommendations, nor should any statements therein be conclusively presumed to be beyond question.