Medical News & Perspectives

Why Do Hundreds of US Women Die Annually in Childbirth?

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Childbirth is often fraught with anxiety for mothers to be, but dying isn't typically top of mind for American women. Until now. A major investigation by *USA Today* last year concluded that "the US is the most dangerous place in the developed world to deliver a baby." The *Washington Post* warned that as global maternal mortality rates fell in recent decades, the number of women in the United States (US) dying in childbirth rose—just like in Afghanistan, Lesotho, and Swaziland.

Approximately 800 women in the US die each year during pregnancy and within 42 days after delivery. The estimated maternal mortality rate was 26.4 per 100 000 live births in 2015. All developed countries did better: 4.4 per 100 000 live births in Sweden, 9.2 in the United Kingdom, and 7.3 in Canada. In fact, a 2017 editorial in the *Lancet* crowed that "being pregnant in the UK has never been safer." According to international groups, maternal mortality rates dropped by an estimated 44% worldwide from 1990 to 2015—a decline of 48% for industrialized countries. Based on US statistics, pregnancy-related deaths rose there by an estimated 27% from 2000 to 2014.

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Years of unreliable US maternal mortality data kept the problem under the radar. The Centers for Disease Control and Prevention's (CDC's) National Center for Health Statistics hasn't published an official maternal mortality rate since 2007. "It's a total embarrassment that international databases such as the Organization for Economic Cooperation and Development lists a dash for the US' maternal mortality rate when a country like Mongolia is able to report one," says Marian MacDorman, PhD, of the Maryland Population Research Center. "Our maternal mortality data are a real mess."

Although 166 out of 183 countries lowered their maternal mortality rates between 1990 and 2013 as they worked to achieve the United Nations' Millennium Development Goals, "the effort in the US was almost nonexistent, partly because we had no idea what our rates of maternal mortality are," says MacDorman.

Rare Deaths, Sketchy Data

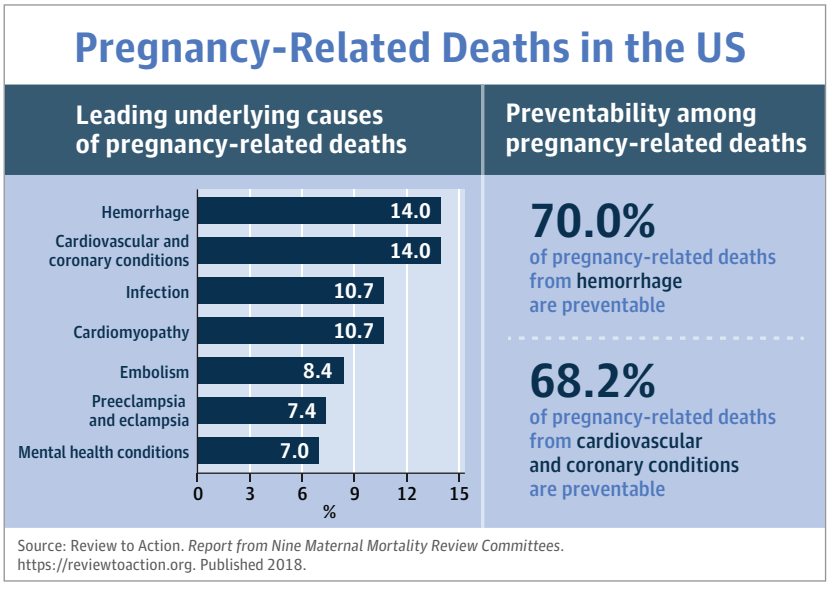
It's rare for a pregnant patient to die during obstetric care but in the 1990s, obstetricians weren't correctly reporting the deaths. In 2003, the CDC tried to better identify pregnancy-related deaths by adding a box to check on death certificates if the deceased was pregnant or postpartum. It wasn't until 2015, however, that every state added the box to their death certificates. And the reporting still isn't standardized; a recent CDC study found that 15% of reported maternal deaths in 4 states were incorrect.

Data on the causes of death during childbirth or postpartum are also incomplete. It is the job of the 35 state and local maternal mortality review committees to analyze redacted patient records to learn what went wrong and recommend ways to address contributing factors. Some states' review committees, however, are unfunded and rely on volunteer physicians.

"These committees range from one OB/GYN reviewing deaths to full multidisciplinary committees that come to consensus on how to translate the data into action to prevent deaths," says Torri Metz, MD, MS, director of Perinatal Research at University of Utah Health, and a member of review committees in Utah and Colorado.

To help states take action on their maternal mortality review committees' findings, Merck for Mothers, which has committed $500 million over 10 years to reduce maternal mortality globally, funded 12 states' prevention efforts. The initiatives ranged from addressing pregnancy-related complications such as depression, domestic violence, and cardiovascular disease to helping clinicians better manage hypertension, hemorrhage, and other obstetric emergencies. And legislation recently signed into law will provide $12 million annually for 5 years to strengthen maternal mortality review committees in every state.

Too few maternal deaths occur in most states each year to yield meaningful interventions to prevent those deaths, argues Steven Clark, MD, professor of obstetrics and gynecology at Baylor College of Medicine. "Most of these review committees simply collect categories of death—the percentage of women who died of cardiac disease, hypertensive



Source: Review to Action. *Report from Nine Maternal Mortality Review Committees*. https://reviewtoaction.org. Published 2018.

disease, or embolic disease—which is not useful information or granular enough to allow us to do more than wring our hands and say we have to do something about maternal mortality," he says.

When Clark led the obstetric safety program for Hospital Corporation of America (HCA) with its 210 000 annual births, he cut HCA's maternal death rate to about half the national average by instituting 2 protocols for pregnant patients: one triggered automatic and rapid antihypertensive therapy when patients exceeded specific blood pressure thresholds and the other prompted an emergency chest x-ray to look for pulmonary edema when a woman reported shortness of breath.

"By analyzing data from millions of births, we could find the steps that there would be no compromising on," says Clark, who is calling for a national maternal mortality review committee. Only by aggregating and analyzing states' data on maternal deaths can clinicians and researchers hope to find the broader patterns and repeated errors that would lead to an evidence-based national action plan, he says.

Tackling Preventable Deaths

More than 60% of pregnancy-related deaths in the United States are preventable, a major 2018 report concluded. Hemorrhage, cardiovascular and coronary conditions, cardiomyopathy, or infection caused nearly half of the deaths, but the leading causes of death varied by race. Preeclampsia and eclampsia, and embolism were the leading causes of death for non-Hispanic black women, while mental health problems led to more deaths in non-Hispanic white women. Deaths were most common within the 42 days postpartum (45%).

Medical errors, ineffective treatments, and lack of care coordination by clinicians and hospitals are major causes of preventable deaths, according to the report. A mother's death in the hospital often reflects a lack of preparation to deal with rare or catastrophic complications, says Barbara Levy, MD, vice president, health policy, of the American College of Obstetricians and Gynecologists.

"Any one hospital is unlikely to have seen a maternal death in the last 5 years because the absolute numbers are relatively small," Levy says. Consequently, "hospitals put more effort into managing medical emergencies that happen every day versus those that happen once every few years."

With nearly 500 000 annual births, California confronted its high maternal mortality rate—16.9 per 100 000 live births—head-on starting in 2006. By 2013, the state cut its maternal mortality rate by half due to the widely lauded efforts of the California Maternal Quality Care Collaborative (CMQCC), which spurred large-scale safety and quality improvement initiatives in the state's 240 birthing hospitals. The CMQCC, housed at Stanford University, has created quality-improvement "toolkits" for the most preventable causes of maternal mortality. The toolkits include evidence-based practices and recommendations for how to implement them. More importantly, the CMQCC mobilizes outreach efforts that help clinicians follow best practices and overcome barriers, including hospital cultures that get in the way.

"Physicians faced with obstetric hemorrhage can get stuck, doing three or four D&Cs instead of following a standardized plan to manage postpartum hemorrhage," explains Elliott Main, MD, medical director of the CMQCC. But if the hospital adopts a mandatory plan for managing hemorrhage and drills its staff, "it's a thing of beauty to watch the team swing into action with everyone knowing what to do to," says Main.

Encouraged by California's success in lowering maternal mortality rates, the Alliance for Innovation on Maternal Health (AIM) urges hospitals nationwide to adopt "bundles" of best practices in maternal safety practices. For example, the obstetric hemorrhage bundle requires hospitals to have emergency carts containing drugs and equipment needed to immediately respond to a mother who is hemorrhaging. A checklist on the cart describes how to recognize and manage hemorrhage. "The physiology of pregnancy can make it much harder to recognize when a patient is in trouble," says Levy. "Young healthy women don't show us classic signs of bleeding."

Last year, AIM received $2 million per year for 5 years to expand its national maternal safety effort. Twenty-three states now use the safety bundles, but AIM's goal is for every US birthing facility to be using the bundles within 5 years and "changing their culture to make a commitment to quality and safety," says Levy.

The Toughest Fixes

Making childbirth safer in hospitals may be less daunting than remedying a lack of prenatal care or unraveling the causes of postpartum deaths. "Maternal mortality is a vital sign of our society, which can't be solved by simply changing the health system," says Mary-Ann Etiebet, MD, MBA, executive director of Merck for Mothers.

"Totally stunned" was how Gary Hankins, MD, chairman of obstetrics and gynecology at the University of Texas Medical Branch in Galveston, Texas, described his reaction to discovering that suicide, homicide, or drug overdoses were responsible for nearly half of postpartum deaths in Texas. Most of those women hadn't received mental health care, which can be very difficult for new mothers to access, says Hankins, who previously served on Texas' maternal mortality review committee.

"More than half the deliveries in the US are covered by Medicaid, which stops paying for pregnancy care six weeks postpartum," he says. Another problem: Mothers will bring their newborns for a well-baby visit, but many skip their own postpartum 6-week visit where depression and other potential life-threatening problems may be diagnosed. Hankins' solution? To institute a plan at the University of Texas Medical Branch combining mother and baby visits at 2 weeks postpartum.

Patient advocates, such as community health workers and doulas, also need to be integrated into care systems to support at-risk women when their lives are at stake, says Merck's Etiebet. "Without patient advocates, women struggling with substance abuse or mental health issues in particular can get lost in the system because they are worried about the implications of sharing that information," with their physicians, she says. "We need to catalyze new types of partnerships to listen to women."

Eliminating the racial disparity gap in maternal deaths is proving to be the biggest challenge of all. Main says that black women continue to die in childbirth at rates 3 to 4 times higher than white women regardless of underlying risk

factors such as obesity and hypertension. "The narrative is that black women don't get prenatal care, which isn't true and it blames the mother," he says. "Black women have a very different birthing experience than white women due to a lack of trust in the medical system and how they are treated. People don't like to hear the 'r' word, but it's real if you're black. This is a hard one to solve, but it's a journey we have to face."

Despite the recent negative press about the US maternal mortality crisis, some experts express optimism. "We've been doing a lot in the last few years," says Mary D'Alton, MD, chair of obstetrics and gynecology at Columbia University. "There is reason for hope that many of these efforts will drive down preventable maternal mortality and morbidity. We need to stay laser-focused on that progress and give women the care they deserve." ■

Note: Source references are available through embedded hyperlinks in the article text online.