

'Safety bundles' may reduce pregnancy-related deaths, particularly among Black women

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A woman begins losing blood during childbirth. Some vaginal bleeding is normal, but is it too much?

How that question gets answered—and how quickly a hemorrhaging mother gets treated—can make the difference between life and death. Excessive blood loss is the leading cause of death for women on the day they give birth and one of the leading causes of maternal death in the postpartum period. It is a complication that is far more likely to be fatal for Black women.

Heart conditions, high blood pressure disorders and strokes are among the other underlying causes of pregnancy-related deaths in the United States. Yet the majority of maternal deaths—84% of them—may be preventable, [Centers for Disease Control and Prevention data](#) shows. More hospitals are taking steps to make sure they are, by adopting evidence-based guidelines and [best practices](#) known as maternal safety bundles.

"These protocols work," said Dr. Ndidiamaka Amutah-Onukagha, the Julia A. Okoro Professor of Black Maternal Health in the department of public health and [community medicine](#) at Tufts University in Boston. "When hospitals follow them, people's lives are saved."

What's driving the push for safety bundles, which standardize the care given to women during and after childbirth, is that hundreds of women in the U.S. die every year from pregnancy-related complications. Black, American Indian and Alaska Native women are at least twice as likely as their white peers to die during pregnancy, childbirth or in the weeks after giving birth.

"What we're looking to do is ensure standardization of care during delivery, especially for the conditions most likely to cause illness or [death](#)," said Dr. Audra Meadows, professor and vice chair for culture and justice in the department of obstetrics, gynecology and reproductive science at the University of California, San Diego School of Medicine in La Jolla. "If you have standardization, you mitigate variation in care and

disparate outcomes."

Studies show multiple factors contribute to preventable maternal deaths. For example, the amount of blood a woman loses during delivery is routinely underestimated, research shows. That can lead to delays in diagnosis and effective treatment, which may contribute to nearly a third of all hemorrhage-related pregnancy deaths, according to a [2018 report](#) that looked at maternal mortality data from nine states.

The report found treatment delays and other provider-related factors likewise contributed to about half of maternal deaths due to the hypertensive disorders preeclampsia and eclampsia, which are more common among Black women than white.

Structural racism, not a woman's race, often drives these disparities, Meadows said.

"That doesn't mean care delays are intentional," she said. "Implicit biases can cause [health care professionals](#) to discount complaints from a patient or not take their symptoms seriously. Variations in care also may occur because one community's hospital performs better than another, because it may have more staff, more training, more resources."

Meadows and Amutah-Onukagha are among the researchers studying the ways safety bundles can ensure that every woman—regardless of race, ethnicity and other sociodemographic factors—receives the same care under the same set of medical circumstances. The researchers are part of a team developing safety bundles specifically targeted at reducing maternal health disparities in Massachusetts.

By standardizing care for all, safety bundles "actively undo the racism embedded in the health care system," Amutah-Onukagha said.

Safety bundles aren't new. They were first introduced in the early 2000s, becoming an important tool for preventing deaths in intensive care units. Their use in addressing maternal deaths and pregnancy-related complications has grown over the past decade.

Since 2013, the Council on Patient Safety in Women's Health Care and the Alliance for Innovation on Maternal Health have developed 10 safety bundles related to maternal health. In addition to obstetric hemorrhage and severe hypertension in pregnancy, bundles have been created for maternal venous thromboembolism, or blood clots in the veins, postpartum care and reducing cesarean births.

Their use accelerated in 2020 when the Joint Commission, the organization responsible for hospital accreditations, included prenatal and postpartum care bundles in its Perinatal Care Services certification for health care facilities.

A growing body of evidence suggests safety bundles can be effective not just in reducing disparities but in improving outcomes for all women.

Safety bundles [have been shown](#) to reduce the rate of eclampsia—a life-threatening hypertensive condition—by 42% and other severe childbirth-related complications by 17%.

A [2017 study](#) in the *American Journal of Obstetrics and Gynecology* showed use of a postpartum hemorrhage bundle in a collaborative of 99 California hospitals reduced severe childbirth-related complications by 21% compared to a 1% reduction in comparison hospitals. Hospitals that had prior experience with the protocols saw an even higher 29% reduction.

A subsequent [2020 study](#) published in the same journal found use of the safety bundle lowered complication rates due to hemorrhage by 9% for

Black women and 2% for white women.

"At the core, we are dismantling how racism affects variations in treatment," Amutah-Onukagha said. "If protocols are in place, they level the playing field."

Amutah-Onukagha, who founded and leads an annual conference on Black maternal health in Boston, said the key to successful implementation of safety bundles is having people on staff at the hospital who are passionate about it.

"You need a champion to get behind it," she said. "You need to make sure the teams are trained and know how to do all the procedures properly. You need buy-in from the nurses. It's really about shifting the culture."

When done correctly, Meadows said, safety bundles work because they make health care decisions objective, removing even those biases people may not realize they have.

"We aren't changing the people we care for; we are changing care quality," she said. "What we're talking about is fixing the system."

Provided by American Heart Association

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