


**Obstetric Complications:
The Essentials
and More**

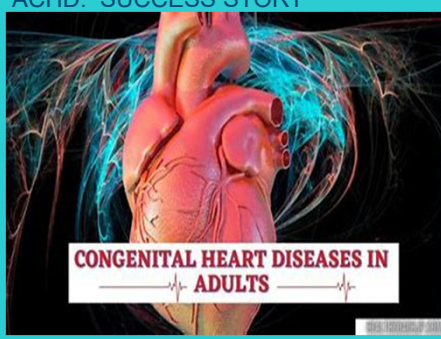
ADULT CONGENITAL HEART DISEASE

William E. Wagner, MD
MFM/Critical Care Medicine
FACOG/FCCM
Partner Minnesota Perinatal Physicians
Interim Vice President Women's Health Service Line Allina health



Allina Health 

2

ACHD: SUCCESS STORY



**CONGENITAL HEART DISEASES IN
ADULTS**

Allina Health  **Obstetric Complications:
The Essentials and More** 

4

4

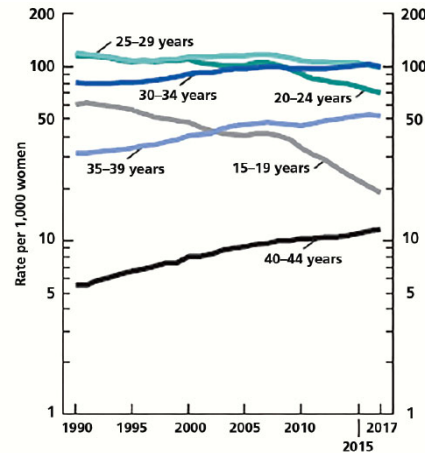
KEY POINTS

Several trends are increasing cardiovascular risk in pregnancy. The average maternal age at first pregnancy is increasing, survival in congenital heart disease has improved, and cardiovascular risk factors are developing at younger ages.

Maternal morbidity and mortality are increasing, with cardiovascular diseases accounting for over one-quarter of peripartum and postpartum deaths.

Rates of maternal mortality from cardiovascular disease are highest among low-income women and women of color.

The emergence of new cardiovascular complications during pregnancy is often considered a failed stress test and can increase the risk of future cardiovascular disease. Women should be monitored closely after pregnancy in order to improve maternal outcomes and prevent the development of future cardiovascular disease.



NOTE: Rates are plotted on a logarithmic scale.
Source: NCHS, National Vital Statistics System, Natality.

Figure 1. Birth rates by selected age of mother, United States, 1990–2017

Mathews TJ, Hamilton BE. Mean age of mothers is on the rise: United states, 2000–2014. NCHS data brief 2016; (232):1-8

Allina Health

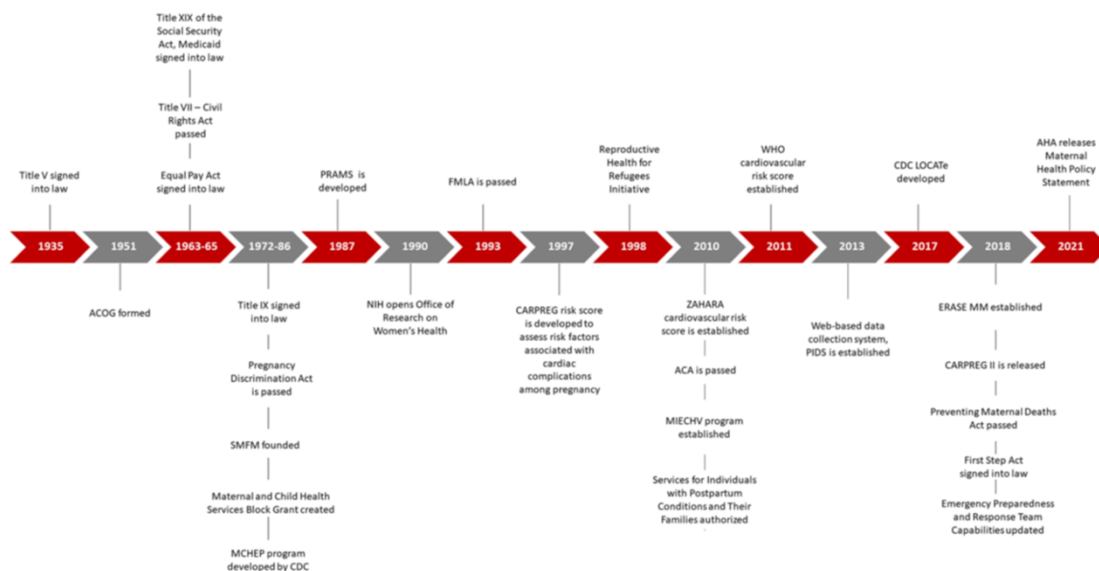
Obstetric Complications:
The Essentials and More



5

5

Milestones in the Advancement of Maternal and Reproductive Health Equity



Allina Health

Obstetric Complications:
The Essentials and More

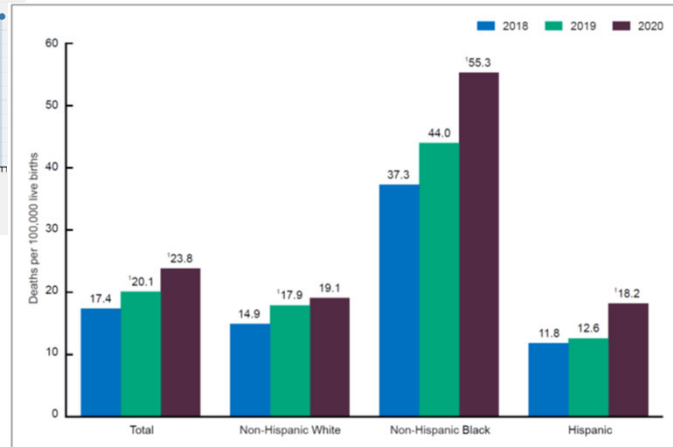
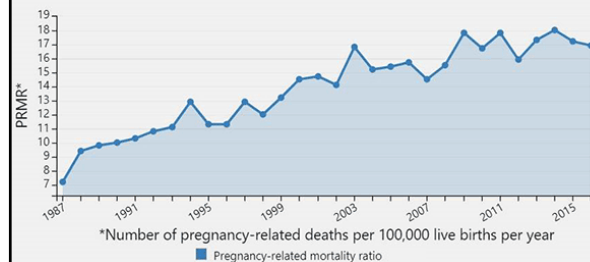


6

THE SCOPE OF THE PROBLEM

In 2018, preventing maternal deaths act passed

Trends in pregnancy-related mortality in the United States: 1987-2016



Allina Health

Obstetric Complications:
The Essentials and More



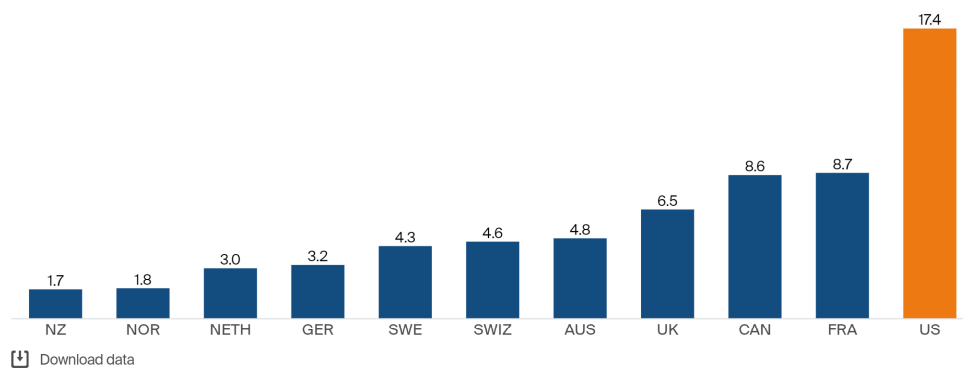
¹Statistically significant increase in rate from previous year ($p < 0.05$).
NOTE: Race groups are single race.
SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

7

Exhibit 1

Maternal Mortality Ratios in Selected Countries, 2018 or Latest Year

Deaths per 100,000 live births



Notes: The maternal mortality ratio is defined by the World Health Organization as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.

Data: OECD Health Data 2020, showing data for 2018 except for 2017 for Switzerland and the UK; 2016 for New Zealand; 2012 for France.

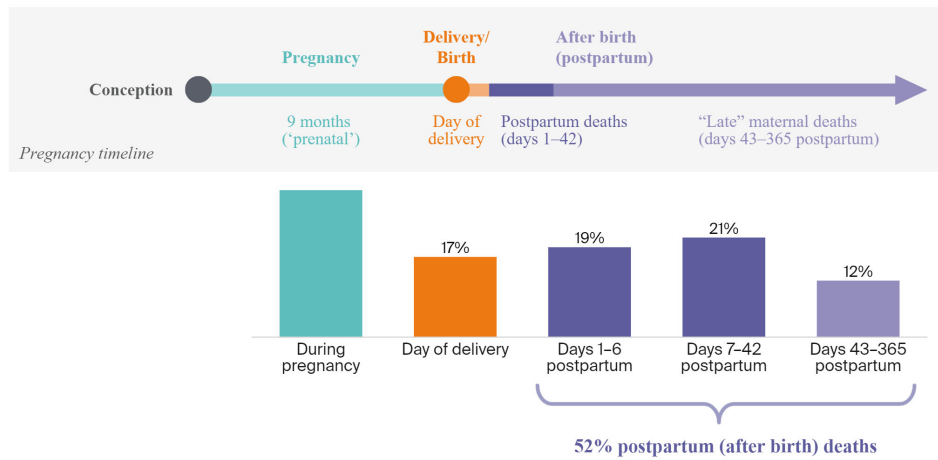
Allina Heal

Source: Roosa Tikkanen et al., *Maternal Mortality and Maternity Care in the United States Compared to 10 Other Developed Countries* (Commonwealth Fund, Nov. 2020). <https://doi.org/10.26099/411v-9255>

8

Exhibit 2

Timing of U.S. Maternal and Pregnancy-Related Deaths, 2011–2015



Data: Centers for Disease Control and Prevention Pregnancy-Related Mortality Surveillance data from: Emily E. Petersen et al., "Vital Signs: Pregnancy-Related Deaths, United States, 2011–2015, and Strategies for Prevention, 13 States, 2013–2017," *Morbidity and Mortality Weekly Report* 68, no. 18 (May 10, 2019): 423–29.

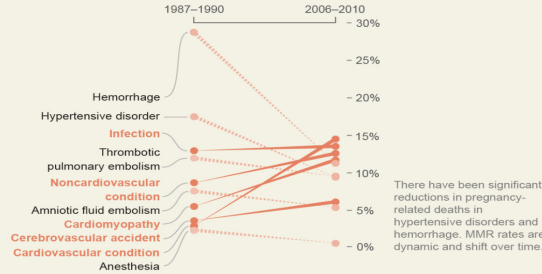
Source: Roosa Tikkanen et al., *Maternal Mortality and Maternity Care in the United States Compared to 10 Other Developed Countries* (Commonwealth Fund, Nov. 2020). <https://doi.org/10.26099/411v-9255>

Allina Health

9

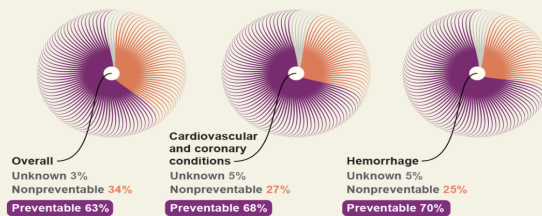
Causes of Pregnancy-Related Death in the U.S.

1987–1990 and 2006–2010



Distribution of Preventability among Pregnancy-Related Deaths

Per a 2018 report including data from nine states, spanning 2008–2017



About a third of all maternal deaths are considered to be nonpreventable. But the most common conditions associated with maternal mortality, such as heart disease and hemorrhage, can be better handled to avoid poor outcomes.

Credit: Valentina D'Elipio; Source: *Report from Nine Maternal Mortality Review Committees. Building U.S. Capacity to Review and Prevent Maternal Deaths*, 2018

Allina Health

Obstetric Complications:
The Essentials and More

10

Obstetric Complications: The Essentials and More

Adults with congenital heart defects

Some patients may have **mild defects** and have never needed surgery;

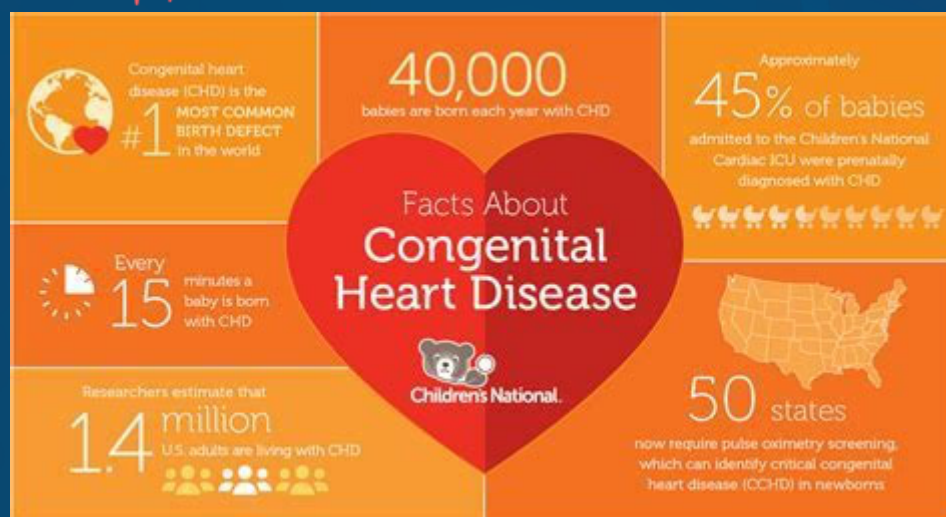
In others, the defect may have been **missed** and may not be discovered until adulthood.

The majority, however, have had previous cardiac surgery and may consider themselves, **"CURED"**. The perception of **"CURE"** is fostered by surgical description **"Total Correction"**. In **reality**, there is **almost no surgical cure** for congenital heart disease, perhaps with the exception of a successfully ligated and divided **ductus arteriosus**.

AllinaHealth

11

Obstetric Complications: The Essentials and More



AllinaHealth

12

12