Maternal Mortality in Connecticut 2015-2017

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Objectives

- Situate maternal mortality in Connecticut within national and global contexts.
- Describe the efforts of Connecticut Maternal Mortality Review Committee (CT MMRC) to characterize maternal deaths in Connecticut and to develop recommendations for action.
- Outline CT MMRC's recommendations for action to prevent future maternal deaths in Connecticut.

Definitions

CDC's Division of Reproductive Health & CT MMRC Terminology

- Pregnancy-Associated Death:
  the death that occurs during pregnancy or within one year of the end of pregnancy, regardless of the cause.
- Pregnancy-Related Death:
  the death that occurs during pregnancy or within one year of the end of pregnancy from any cause related to or aggravated by the pregnancy or its management.

ICD-10, WHO, CDC's National Center for Health Statistics Terminology

- Pregnancy-Related Death:
  the death of a women while pregnant or within 42 days of termination of pregnancy, irrespective of the cause.
- Maternal Death:
  the death of a woman while pregnant or within 42 days of termination of pregnancy, from any cause related to or aggravated by pregnancy or its management, but not from accidental or incidental causes.

Definitions

CDC's Division of Reproductive Health & CT MMRC Terminology

- Pregnancy-Related Mortality Ratio (PRMR):
  # of pregnancy-related deaths (during pregnancy or within one year after the end of pregnancy) per 100,000 live births.

WHO, CDC's National Center for Health Statistics Terminology

- Maternal Mortality Ratio (MMR):
  # of maternal deaths (during pregnancy or within 42 days after the end of pregnancy) per 100,000 live births.

Outline

1. National and Global Statistics
2. CDC Funding
3. Connecticut Statute
4. CT MMRC Efforts
5. Maternal Mortality in Connecticut
6. CT MMRC's Recommendations

National and Global Statistics

Maternal Mortality in Post-Industrial Countries

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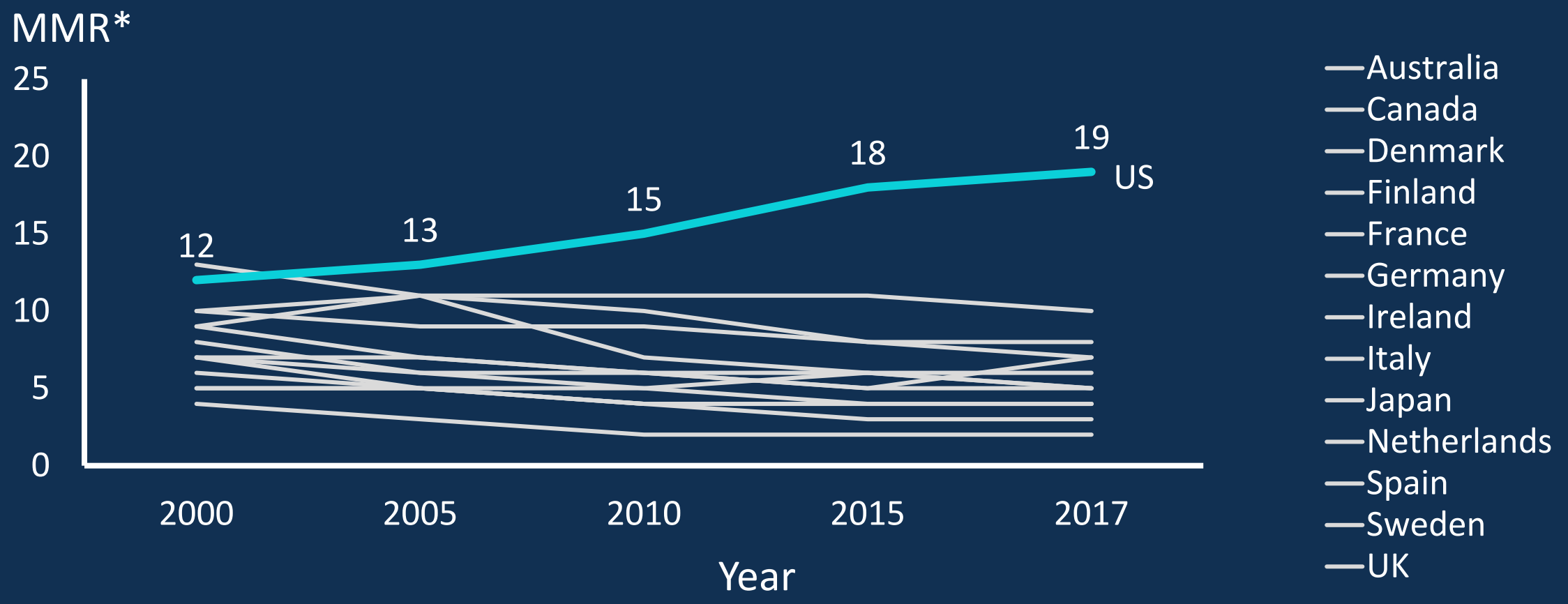
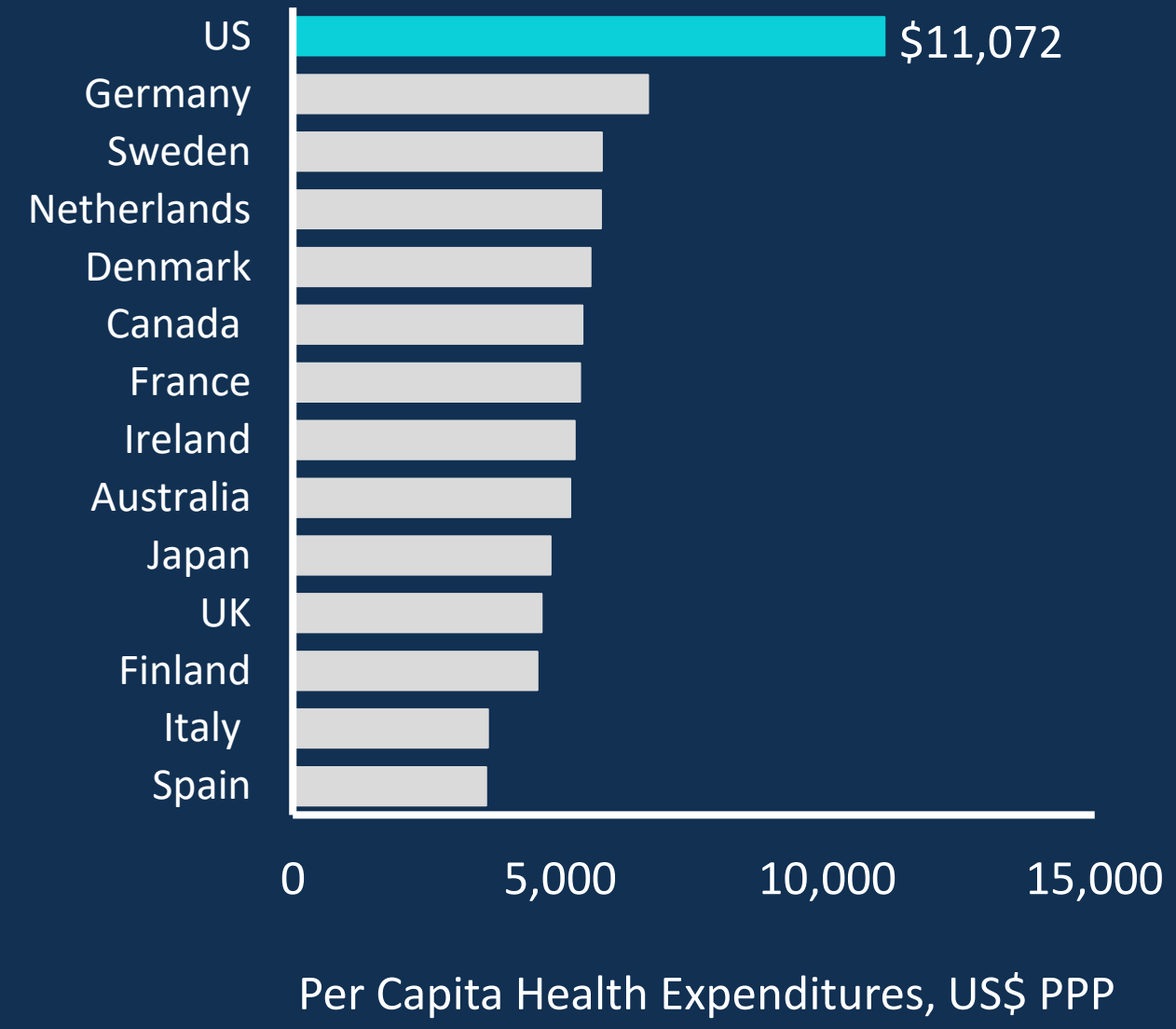


*maternal deaths per 100,000 live births.

Source: WHO, 2020

Health Expenditures in the US vs Other Post-Industrial Countries in 2019



Source: OECD, 2020

Per National Center for Health Statistics, there were

1

658

maternal deaths

in the US in 2018

Source: CDC NCHS, 2020

In 2018 MMR in the US was

1

17.4

per 100,000 live births,

according to NCHS

Source: CDC NCHS, 2020

US MMR exceeds the Healthy People 2020 target

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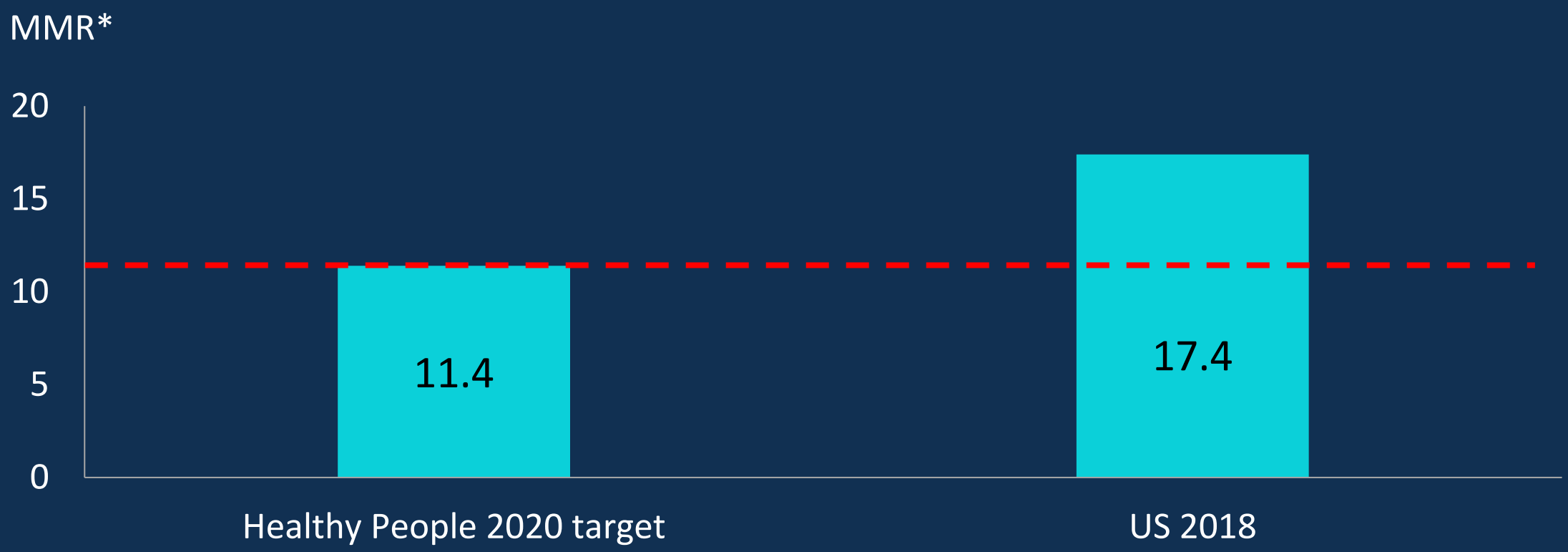

*maternal deaths per 100,000 live births.

CDC Funding

CDC Funding

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- In FY 2019 CDC made 24 awards, supporting 25 states, to fund agencies and organizations that coordinate and manage Maternal Mortality Review Committees, with a goal to:
  - facilitate an understanding of the drivers of maternal mortality and complications of pregnancy and better understand the associated disparities;
  - determine what interventions at patient, provider, facility, system, and community levels will have the most effect; and
  - inform the implementation of initiatives in the right places for families and communities who need them most.

CDC MMRIA Reporting System

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- Online tool – used to be kept by each state, now there is a cloud-based system managed by the CDC
- Key questions to answer:
  - Was the death pregnancy-related?
  - What was the cause of death?
  - Was the death preventable?
  - What were the critical contributing factors to the death?
  - What are the recommendations and actions that address those contributing factors?
  - What is the anticipated impact of those actions if implemented?

Connecticut Legislation

Connecticut Statute

3

- In 2018, Connecticut General Assembly passed legislation charging the Connecticut Department of Public Health (CT DPH) to convene a multidisciplinary Connecticut Maternal Mortality Review Committee, also known as CT MMRC (Sec. 19a-25).
- CT MMRC co-chairs:
  - Commissioner of CT DPH, or their designee – Donna Maselli RN, MPH
  - Representative of the Connecticut State Medical Society – Audrey Merriam MD, MS

CT MMRC Designees

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- DPH (Co-chair)
- CSMS (Co-chair)
- Licensed OB-GYN
- Licensed Pediatrician
- Community Health Worker
- Licensed Nurse Midwife
- Licensed Clinical Social Worker
- Licensed Psychiatrist
- Licensed Psychologist
- Chief Medical Examiner, or designee
- Licensed Maternal-Fetal Medicine physician
- ACOG
- Member of the CT Hospital Association
- Community/Regional Facility for psychiatric disability or substance use
- University of CT Health Disparities Institute
- Cardiologist
- Consumer
- Home visiting provider
- Licensed Clinical Social Worker
- CT DSS Medicaid Medical Director, or designee
- Co-chairs can add any additional member to benefit committee – ER, anesthesia

Connecticut Maternal Mortality Review Committee Efforts

CT MMRC

4

Mission	Identify pregnancy-associated deaths, review those caused by pregnancy complications and other associated causes, and identify the factors contributing to these deaths and recommend public health and clinical interventions that may reduce these deaths and improve systems of care.
Vision	Eliminate preventable maternal deaths, reduce maternal morbidities, and improve population health for women of reproductive age in Connecticut.

Membership doubled

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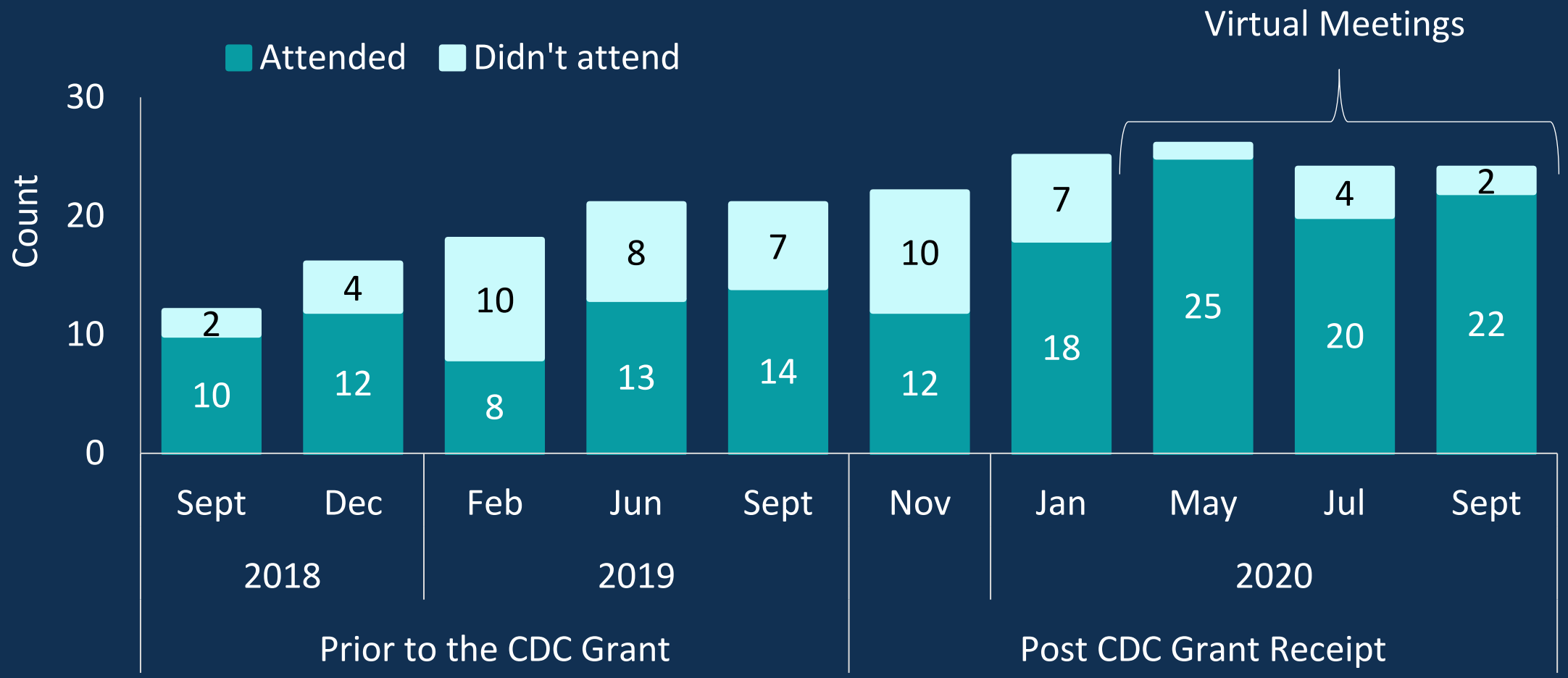

Meeting efficiency improved

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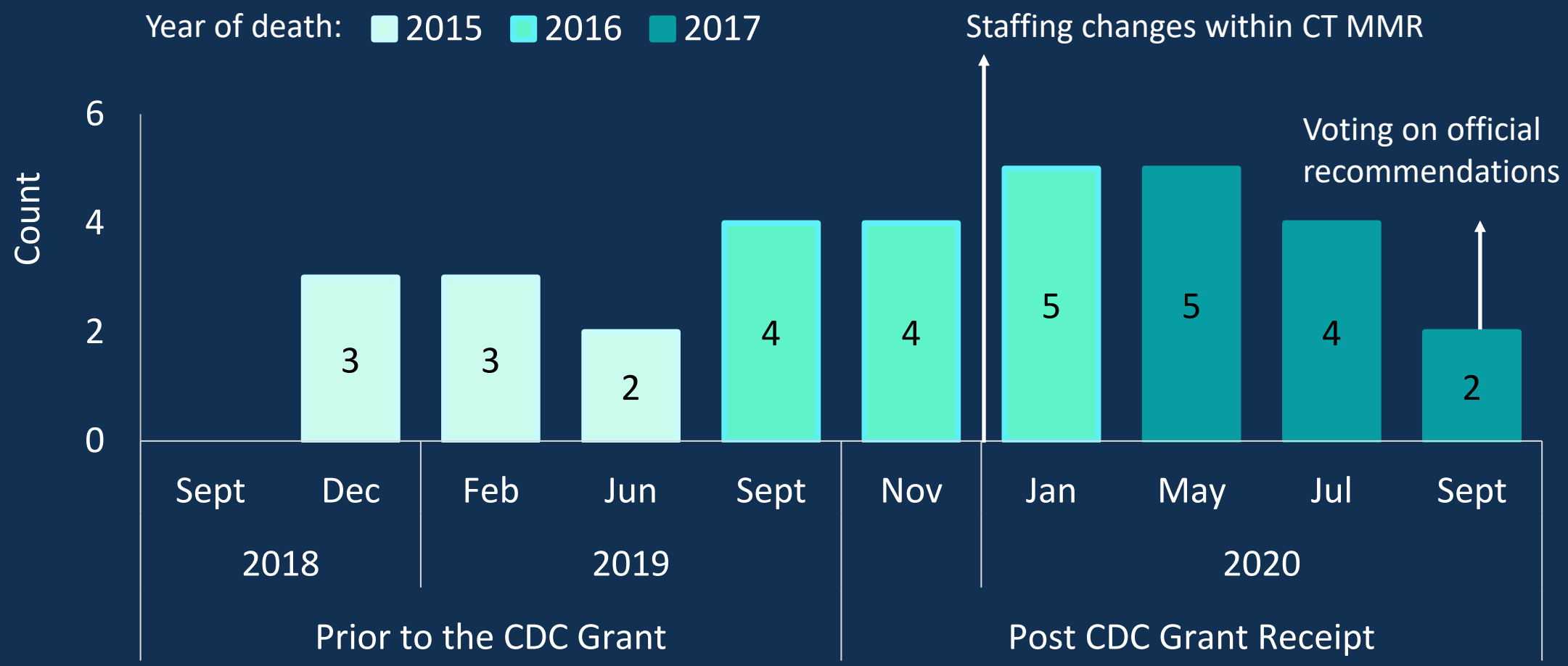
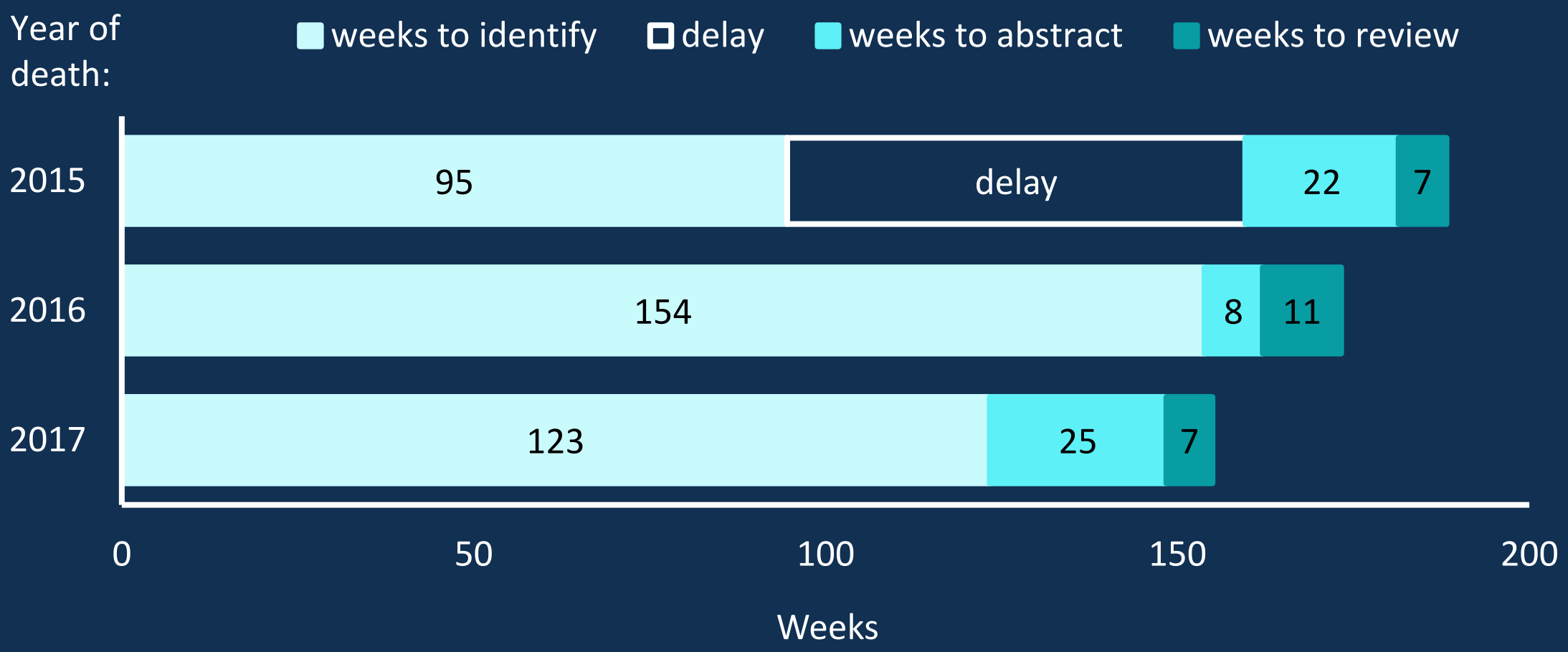


Death-to-review lag is shrinking



Maternal Mortality in Connecticut in 2015-2017

Maternal Mortality in CT

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- In Connecticut in the period between 2015 and 2017, there were:
  - 8-13 pregnancy-associated deaths per year;
  - 3-5 pregnancy-related deaths per year; and
  - about 35,600 live births per year.

Maternal Mortality in CT

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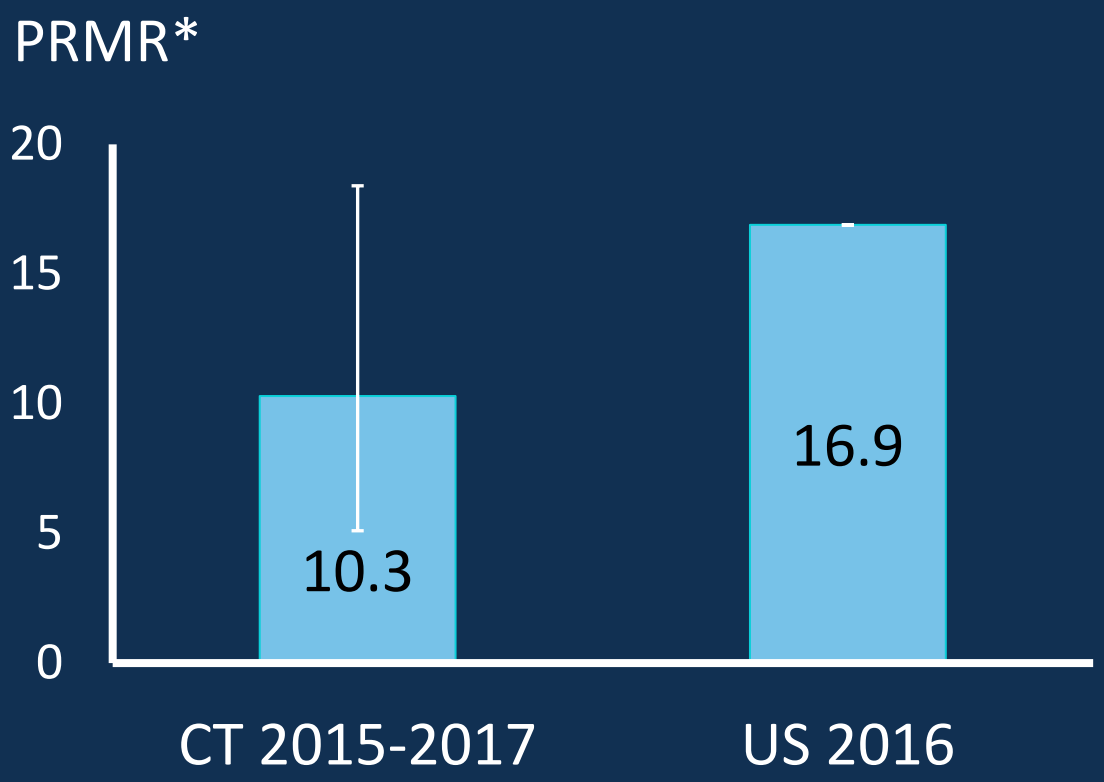

*pregnancy-related deaths per 100,000 live births.

PRMR is based on pregnancy-related deaths that occur during pregnancy or within one year after the end of pregnancy, whereas MMR is based on maternal deaths the occur during pregnancy or within 42 days after the end of pregnancy. Both pertain to deaths from causes related to or aggravated by pregnancy or its management.

PRMR is calculated based on linked birth and death certificates, whereas the official MMR is calculated by the NCHS based on death certificates.

Source: CT MMR

Pregnancy-Relatedness Determinations in 2015-2017

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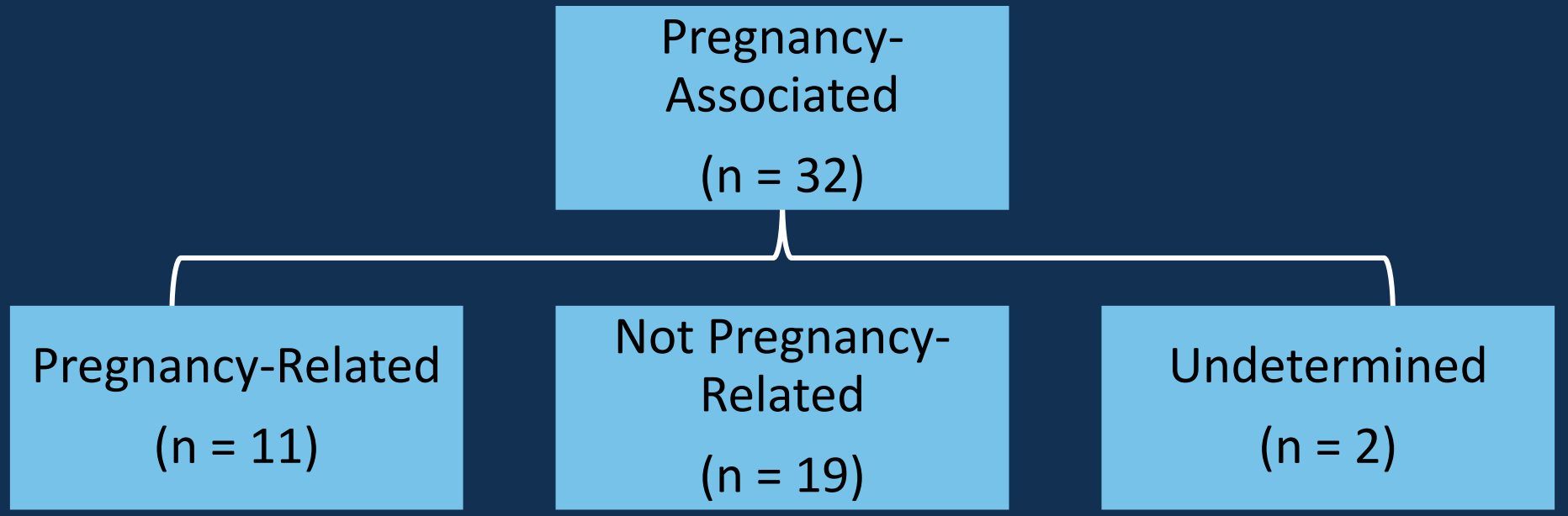

Source: CT MMRC Committee Decision Form

Pregnancy-Associated Deaths

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- N=32 in 2015-2017
- Education level
  - No high school diploma 15.6%
  - High school graduate 34.4%
  - Some college 28.1%
  - Associate degree or higher 15.6%
  - Unknown 6.3%
- Age range 20-44yo
- Race/Ethnicity
  - 37.5% Black
  - 18.8% Latina
  - 43.8% White
- Insurance
  - 56.3% Medicaid
  - 21.9% Private
  - 21.9% Other/Unknown

Source: CT MMR

Women of color were overrepresented

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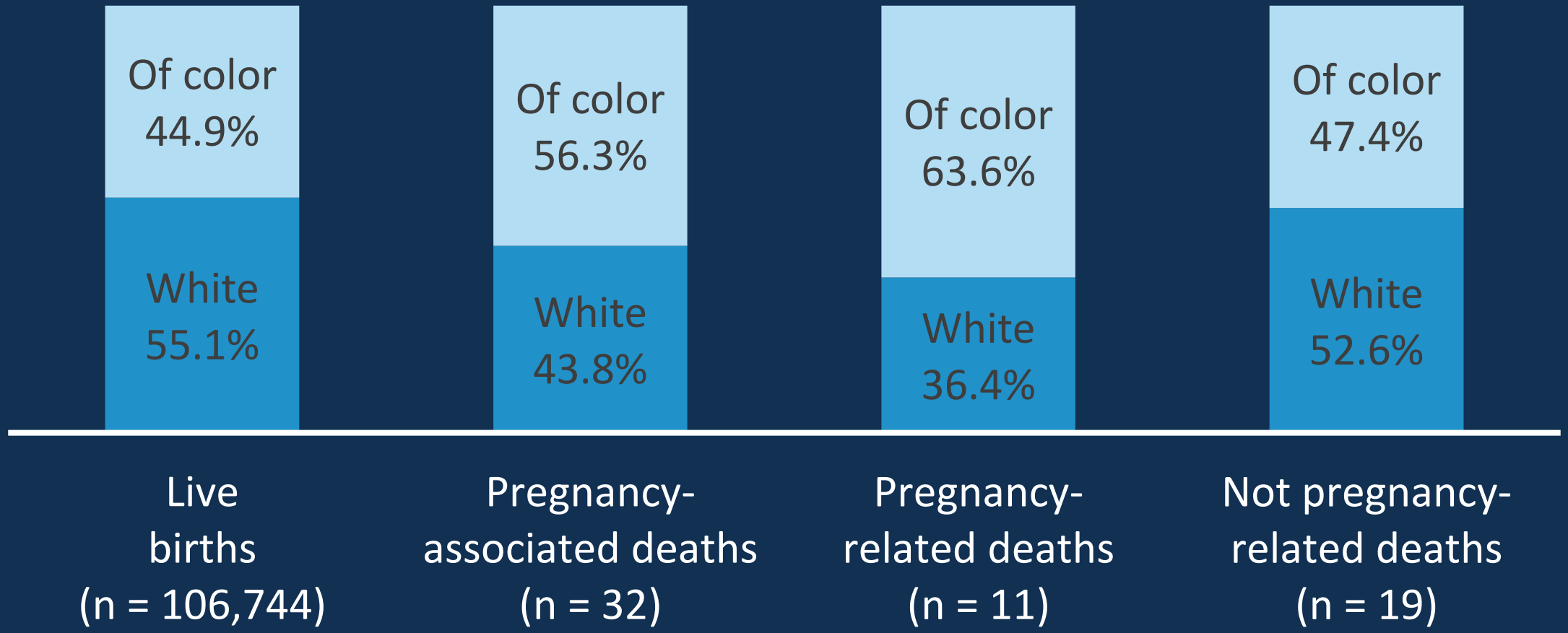

Source: CT MMRC Committee Decision Form

Preventability

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- Was the death preventable?
  - At least some chance of the death being averted by one or more reasonable changes to patient, community, provider, facility and/or systems factors
  - One of the most difficult to answer
  - Many focus groups on this question

Preventable Pregnancy-Related Deaths

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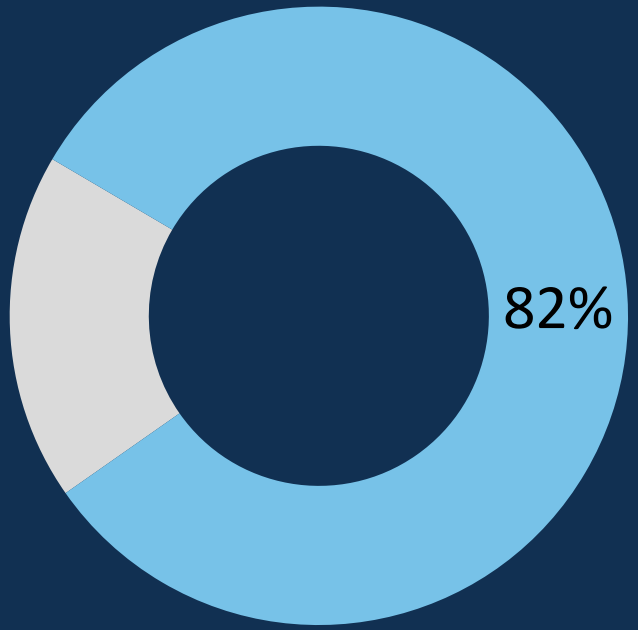
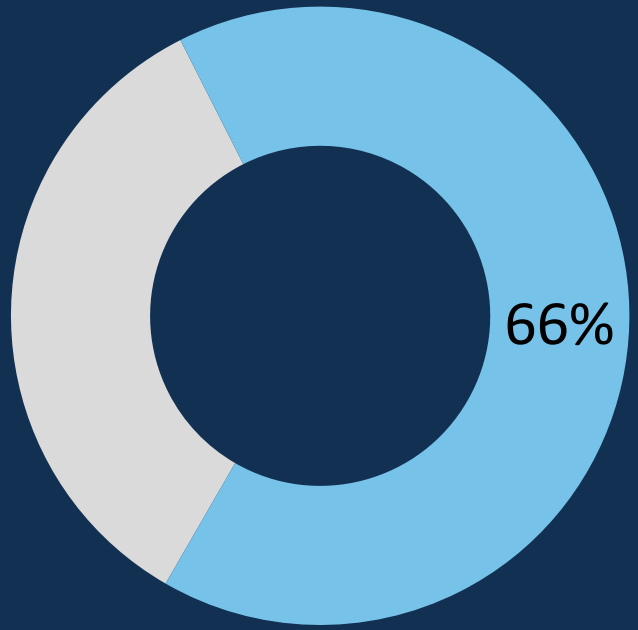
CT 2015-2017 (n = 11)



US 14 MMRCs, 2008-2017 (n = 454)



Source: CT MMR & CDC 2019 Report

Timing of Pregnancy-Related Deaths

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CT 2015-2017 (n = 11)		US 2008-2017 (n = 454)	
During pregnancy	--	During pregnancy	23.9%
Day of delivery	18.2%	Day of delivery	15.5%
1-6 days postpartum	18.2%	1-6 days postpartum	18.4%
7-42 days postpartum	--	7-42 days postpartum	18.6%
43-365 days postpartum	63.6%	43-365 days postpartum	23.6%

Source: CT MMR & CDC 2019 Report

Leading Causes of Death Among Pregnancy-Related Deaths

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CT 2015-2017 (n = 11)

Cardiovascular/stroke	36.3%
Other medical disorders	27.3%
Mental health conditions	27.3%

US 2008-2017 (n = 454)

Cardiovascular conditions	13.8%
Hemorrhage	13.1%
Infection	11.4%
Embolism	9.5%
Cardiomyopathy	9.3%
Mental Health Conditions	8.8%
Preeclampsia & Eclampsia	8.3%

Source: CT MMR & CDC 2019 Report

Other important findings

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- Intimate partner violence was common.
- Mental health conditions factored in women's lives and deaths:
  - 53% had mental health conditions at some point in life;
  - mental health conditions contributed to 37% of pregnancy-associated deaths.
- Substance use was common:
  - 44% misused licit or used illicit substances at some point in life;
  - substance use disorder contributed to 37% of pregnancy-associated deaths.

CT MMRC's Official Recommendations Issued in September 2020

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1) Expand Medicaid coverage to one year postpartum.

2) Promote CDC's *Hear Her* campaign to obstetricians and other obstetrics providers (physician assistants, advanced practice registered nurses, registered nurses, certified nurse midwives), hospital obstetrics units, and emergency departments.

3) Provide trainings to CT MMRC members on intimate partner violence.

4) Provide education to obstetric providers on available evidence-based screening tools for intimate partner violence, perinatal depression, and substance abuse, and also available resources.

5) Provide education in hospitals to emergency department and social work staff as well as to obstetrics offices on indicators of intimate partner violence.

6) Improve access to same day long-acting contraception in Federally Qualified Health Centers.

Thank you!