

Collaborating to ERASE Maternal Mortality in New Hampshire

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Background

- NH Maternal Mortality Review Committee History/ Goals
- CDC Foundation focus on maternal mortality and morbidity
- ERASE MM grant opportunity

NH Maternal Mortality Review Committee History



State of New Hampshire
Department of Health and Human Services

- Maternal Mortality legislation passed 2010
- First case reviews in NH- 2012
- Grant for established MM Committees- CDC

CDC Support

- Communication with each state/ Review to Action website
- Maternal Mortality Review Information Application (MMRIA)
- Enhancing Reviews and Surveillance to Eliminate Maternal Mortality (ERASE MM)

New Hampshire Women ages 15 to 44
who died in a recent 2-year period

All Causes

LUISATIANA JAMIEALYXSHAN KERRI
TANYA CLAIRE KAYLA LAURA SHAUN STACY SARAH TARA KELLY
NICOLE STACEY NIKOLE KELSEY JILLIAN ERIKA ILLONA TARAN DESMA NELLY MISSY ALYSIA KERRY JILLIAN GINA SARAH MOLLY JILLIAN NICOLE SARAH ANGIE APRIL AMBER DARCIE MEGAN MEGAN NANCY HALEY AMBER CARA LISA
RACHEL JENEAN JESSICA RACHEL RACHEL ABIGAIL ASHLEY ASHLEY TASHIA AMELIA ASHLEY JESSICA JESSICA RAMSIE ASHLEY ASHLEY LOUDIA KAYLAN ABIGAIL SHAYNE HALEY ANGELA AZARIA ANDREA SIERRA SARAH
BROOKE HEIDI JO KRISTEN AMANDA JESSICA JESSICA CAITLIN VALERIE LINDSEY ALLISON LISA MONICA LARISSA ANDREA SHANNA TIFFANY LAUREN KATIE CARMEN ANDREA ARIELA ALIYAH TABITHA YVONNE ASHLEY
MEGHAN REBECCA CANDACE AMANDA TIFFANY LORENA MELINDA JULIE MELISSA SABRINA REBECCA SHAUNN KATELYN REBECCA AULBANI HANNAH CRYSTAL HANNAH AMANDA AMANDA HEATHER MEGHAN BRITTNI
NICOLE KRISTINA DANIELLE DEATRAHARIANNA DANIELLE DANIS CHRISTAL MELISSA JENNIFER BRITTANY REBECCA TANYSHA CHANTAL REBECCA HEATHER REBECCA REBECCA BRANDIE KARI MAUREEN HEATHER BRIANNA KELLY
ERIN JENNIFER MAUREEN DANIELLE ZOE KIMBERLY LACEY BARBARA MONIQUE ASHLEY CORDELIA ELIZABETH DANIELLE BUTONGA KRISTINA JENNIFER MAUREEN JENNIFER JENNIFER KELLY ANN MICHAELA DANIELLE PENYCELL ASHLEY
EMILY GABRIELLA SAMANTHA ANGELIQUE SYLVIANNE BRANDY MARCELLA SAMANTHA SAMANTHA SUSANNAH LEAH STEPHANIE COURTNEY MEGHAN MERCEDES CHRISTINA ALEXIS CHRISTINA ALISA ABBIGAYLE KATHERINE MACKENZIE
CHRISTIANA BETH LINDA-JOY ALEXANDRA SAMANTHA SAMANTHA CASSANDRE JASMINE MEREDITH-LEIGH DANIELLE KIMBERLEY JEANETTE LISA SAMANTHA SAMMANTHA CHRISTINA CATHERINE KARIS JACQUELINE SHELLY ANNE
GENESASHANNON COURTNEY COURTNEY CHRISTINA DANNIELLE STEPHANIE MIA SAMANTHA STEPHANIE DANIELLE CASANDRA LEANDRA JENNIFER STEPHANIE MICHELLE CHRISTINE KATHLEEN ELIZABETH COURTNEY ROXANN
HEIDI JENNIFER JANNATHALIA JENNIFER MICHELLE AMBER KIMBERLY JENNIFER HELMI KATHERINE COURTNEY KATHLEEN KRISTINA ASHLEY ANGELICA KATHLEEN JENNIFER KAYLA KHUMARA MICHAELA SARAH CEDRA LEE STEVIE
KERI ANN ASHLEY SUSANNE BETHANY JILL HEATHER HEATHER TEKESHA HEATHER JOCELYN COURTNEY DAVALYN MORGAN REBECCA CAITLIN N DAWN JENNIFER SHEALYN JILL DANIELLE JENNIFER NATASHA ANGELA JENNIFER
TAMARA REBECCA MARILYN SHARINA AUTUMN PATRICIA LILY YOLANDA JOCELYN SARAH MORGAN AMANDA JULIETTE AMANDA MELISSA COLLEEN TENNEH CANDICE MELISSA MELISSA CRYSTAL AMANDA BRIANNE JANELLE
KAITLYN AMBER KRISTEN CRYSTAL JESSICA JESSICA HOLLIE MELISSA KAITLYN BRITNEY SHAUNA CASSIDY SHANNA JOANNA LINDSEY REMA MELISSA LINDSAY ANDREA JANELLE TIFFANY BROOKE AMANDA AMY LYN JESSICA NICOLE
RACHEL JESSICA GLENYS ASHLEY MEGAN ASHLEY TRACEY MEGAN JENIFER RACHEL JAIMEE KEENYN SHERRY ARIELLE ASHLEY DAKOTA AMBER JESSICA JESSICA JESSICA ASHLEY TRACEY MARIAH ABIGAIL CELINE LAURA
LISA TAYLOR TRISHA BRIANA JESLYN NICOLE HOLLIE KELLEY NICOLE JENNA NICOLE JULIA AMBAR JILLIAN ERIN TAYLOR TAMMY NICOLE NICOLE TANYA MEGAN ALISON DALLAS SARAH KELCIE MARI CINDI SARA JEAN
NICOLE KELLEY TANYA VENUS MARIE AIMEE EMILY NINA ANNA SARA JENNA ALICIA OLIVIA ADENAKISHIA ERICA RYAN BAILEY MINDY CORIE ERIN
MOLLY KAYLA TESSA AIMEE TARA BILLY JULIE CARA

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Pregnancy-Associated Deaths in New Hampshire since 2012

Pregnancy-associated death

The death of a woman while pregnant or within one year of the termination of pregnancy, regardless of the cause. These deaths make up the universe of maternal mortality; within that universe are pregnancy-related deaths and pregnancy-associated, but not related deaths.

Pregnancy-Associated Deaths

2012	3
2013	10
2014	10
2015	7
2016	10
2017	8
2018	9
2019	7
2020 (to date)	4

Pregnancy-related death

The death of a woman during pregnancy or within one year of the end of pregnancy, from a pregnancy complication, a chain of events initiated by pregnancy, or the aggravation of an unrelated condition by the physiologic effects of pregnancy.

2012-2018 = 5 NH

NNEPQIN

NORTHERN NEW ENGLAND
PERINATAL QUALITY IMPROVEMENT NETWORK

ERASE MM

Enhancing Reviews and Surveillance to Eliminate Maternal Mortality



State of New Hampshire
Department of Health and Human Services

Timing and Cause of Pregnancy-Associated Deaths in New Hampshire

- **Eleven of the twelve** pregnancy-associated deaths in 2016-2017 occurred **during the postpartum period** and one was during pregnancy.
- The **leading cause** of pregnancy-associated deaths in NH, 2016-2017 was **accidental drug overdose**.

Maternal Death Causes Among New Hampshire Women ages 15 to 44

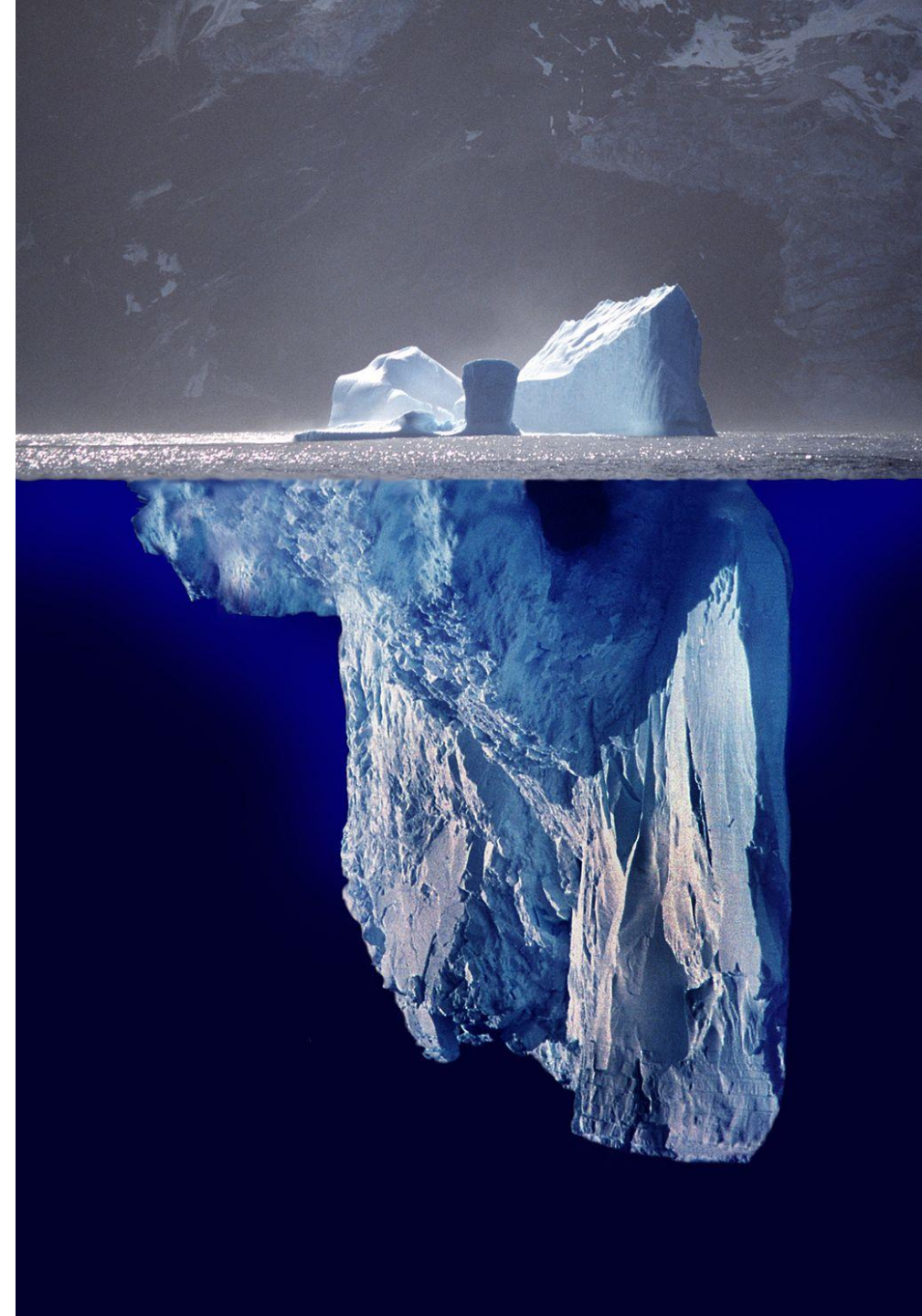
HYPOVOLEMIC SHOCK
CEREBRAL EDEMA PERIPARTUM CARDIOMYOPATHY ANOXIC BRAIN INJURY ASPHYXIATION SEPTIC SHOCK
LIGATURE HANGING SUBARACHNOID HEMORRHAGE COMPLICATIONS OF DIABETES MELLITUS ACUTE COCAINE INTOXICATION MYOCARDIAL INFARCTION
MULTIORGAN FAILURE ACUTE METHADONE INTOXICATION ARTERIOSCLEROTIC CARDIOVASCULAR DISEASE ACUTE FENTANYL INTOXICATION SEPSIS GUNSHOT WOUND OF HEAD
TOXIC EFFECTS OF COCAINE AND OPIATES BRAIN HERNIATION AROUND FORAMEN MAGNUM UPPER GASTRO INTESTINAL BLEED HYPERTENSIVE HEART DISEASE HANGING
HEROIN INTOXICATION ACUTE ACETYL FENTANYL AND FENTANYL INTOXICATION ATHEROSCLEROTIC CORONARY ARTERY DISEASE ACUTE FENTANYL INTOXICATION ACUTE FENTANYL INTOXICATION
ACUTE FENTANYL TOXICITY BLUNT IMPACT INJURY WITH FRACTURE OF CERVICAL SPINE FENTANYL TOXICITY SEIZURE DISORDER OF UNDETERMINED ETIOLOGY BILATERAL NECROTIZING PNEUMONIA
AMNIOTIC FLUID EMBOLI MULTIPLE BLUNT IMPACT INJURIES OF HEAD, TRUNK AND PELVIS SEPTIC PULMONARY EMBOLI ACUTE INTOXICATION BY THE COMBINED EFFECTS OF BUPRENORPHINE AND ALPRAZOLAM
HANGING INCISED WOUNDS OF NECK WITH TRANSECTION OF LEFT COMMON CAROTID ARTERY ACUTE INTOXICATION BY BACLOFEN, CLONIDINE, SERTRALINE, OXYCODONE AND CLONAZEPAM ACUTE FENTANYL INTOXICATION
MULTIPLE BLUNT IMPACT INJURIES MULTIPLE BLUNT IMPACT INJURIES (HAMMER BLOWS) OF HEAD WITH COMPLEX SKULL FRACTURE, CONTUSIONS AND LACERATIONS OF BRAIN POSTPARTUM CARDIOMYOPATHY
ACUTE INTOXICATION BY THE COMBINED EFFECTS OF FENTANYL AND ACETYL FENTANYL HANGING BLUNT IMPACT INJURY OF TRUNK WITH LACERATION OF SPLEEN ABRUPTIO PLACENTA AND RETRO PERITONEAL HEMORRHAGE
SEPSIS MULTISYSTEM ORGAN FAILURE MYXOMATOSIS DEGENERATION OF THE MITRAL VALVE (MITRAL VALVE PROLAPSE) HEMORRHAGIC SHOCK ACUTE INTOXICATION BY THE COMBINED EFFECTS OF COCAINE AND FENTANYL
SPONTANEOUS CORONARY ARTERY DISSECTION, MULTIPLE MULTIPLE BLUNT IMPACT INJURY WITH SKULL FRACTURE ACUTE FENTANYL INTOXICATION PREGNANCY-RELATED CONDITION, UNSPECIFIED
ACUTE FENTANYL INTOXICATION COMBINED DRUG TOXICITY OF COCAINE AND FENTANYL FATAL DYSRHYTHMIA TOXIC EFFECTS OF METHADONE AND DIAZEPAM PANCREATIC CANCER
ACUTE FENTANYL INTOXICATION ACUTE LEFT FRONTAL INTRACEREBRAL HEMORRHAGE BRAIN EDEMA WITH TONSILLAR HERNIATION ASPHYXIATION BY HANGING
CARDIAC HYPERTROPHY SEPSIS PNEUMOCOCCAL OF UNKNOWN SOURCE HYPERTENSIVE CARDIOVASCULAR DISEASE ACUTE FENTANYL INTOXICATION TOXIC EFFECTS OF OPIATES
CARDIAC ARREST BLUNT IMPACT INJURIES ACUTE FENTANYL INTOXICATION FENTANYL AND ETHANOL TOXICITY PUERPERAL SEPSIS TOXIC EFFECTS OF OPIATES BLUNT FORCE TRAUMA
CEREBRAL ANOXIA PERIPARTUM CARDIOMYOPATHY
CARDIOGENIC SHOCK

Severe Maternal Morbidity Background

- Maternal Deaths “Tip of the iceberg”
- Severe Maternal Morbidity “Near-misses”
- Unexpected outcomes of labor and delivery that result in significant short- or long-term consequences to a woman’s health

Maternal Mortality

Severe Maternal Morbidity



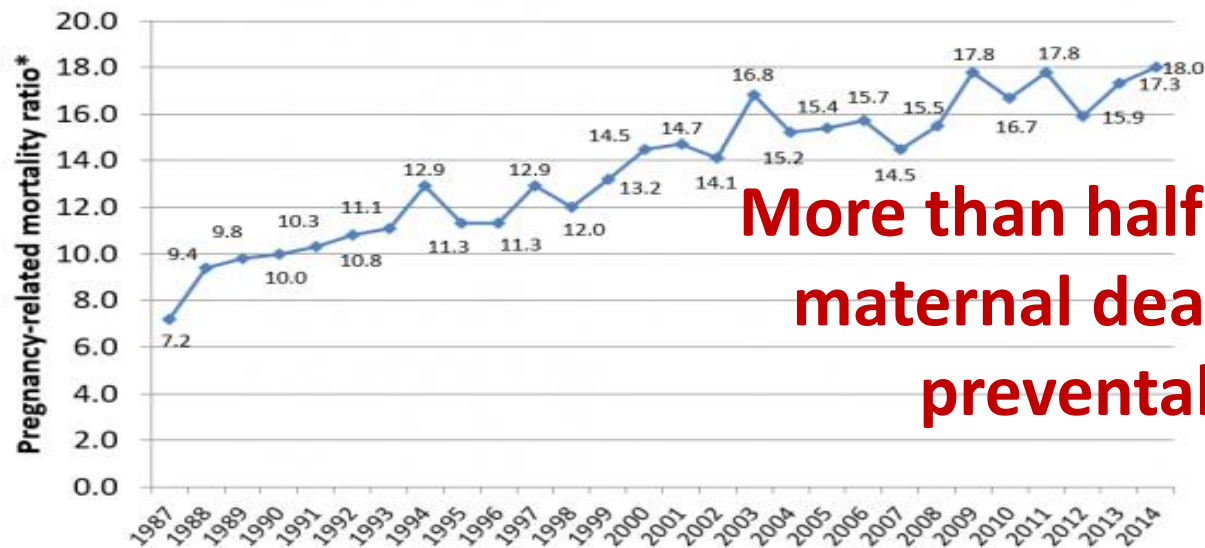
Overall Severe Maternal Morbidities (SMM) and AIM measures, 2013-2015

	ME		NH		VT	
	Count	Rate per 10,000	Count	Rate per 10,000	Count	Rate per 10,000
Total delivery discharges	35,729	NA	35,692	N/A	16,285	N/A
Any SMM						
Any severe maternal morbidity (21 conditions)	430	120.4	541	151.6	322	197.7
Any severe maternal morbidity (excluding transfusion)	267	74.7	233	65.3	143	87.8
Severe hypertension						
Severe hypertension cases	773	216.4	811	227.2	372	228.4
SMM among severe hypertension cases	59	763.3	54	665.8	54	1,451.6
SMM (excluding transfusion) among severe hypertension cases	53	685.6	36	443.9	36	967.7
Severe hemorrhage						
Severe hemorrhage cases	2869	803.0	2585	724.3	1,144	702.5
SMM among hemorrhage cases	270	941.1	417	1613.2	238	2,080.4
SMM (excluding transfusion) among hemorrhage cases	107	373.0	109	421.7	59	515.7

Maternal Mortality: Ongoing Public Health Crisis in the United States



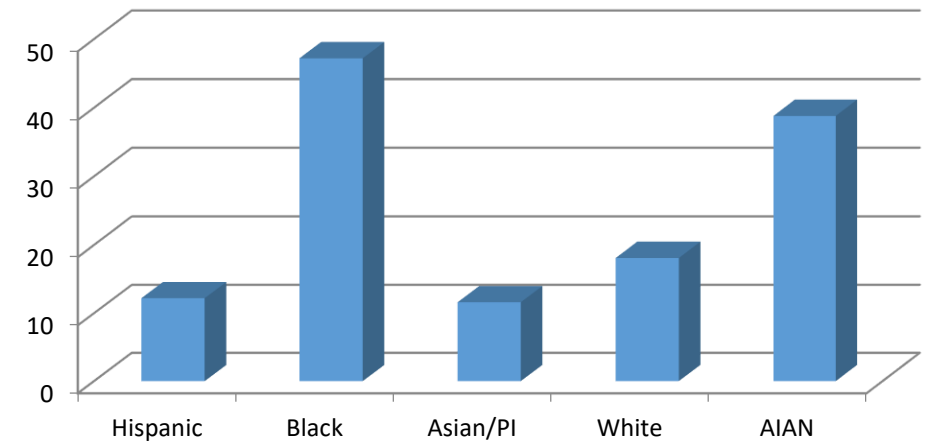
Trends in pregnancy-related mortality in the United States: 1987–2014



**More than half of these
maternal deaths are
preventable**

*Note: Number of pregnancy-related deaths per 100,000 live births per year.

Maternal Mortality by Race (2012-2015)



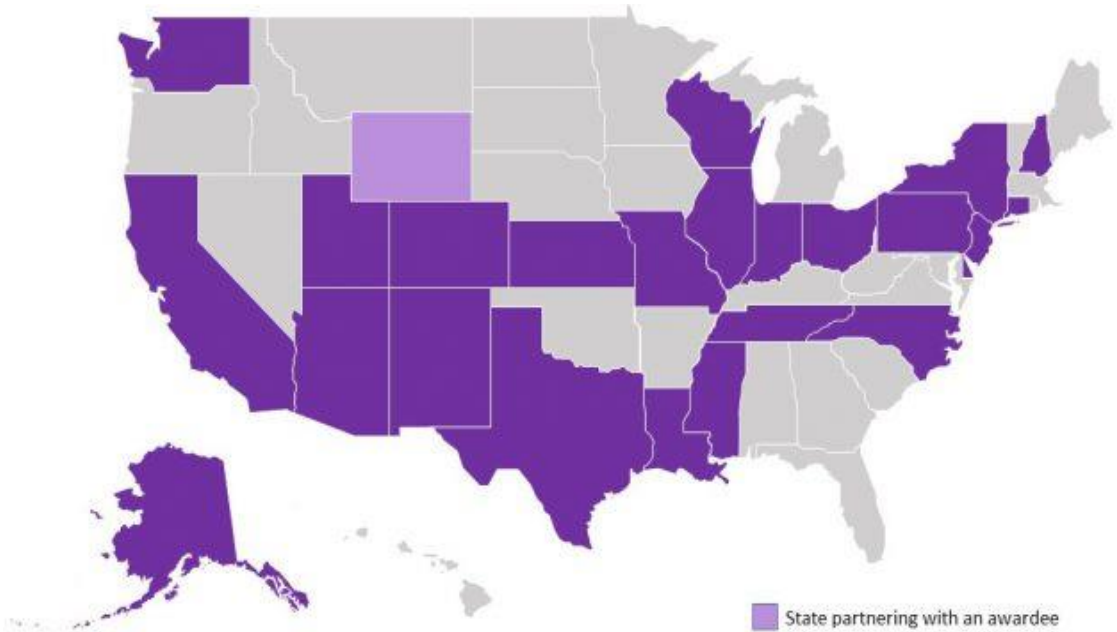
Characteristics of U.S. Pregnancy-Related Deaths: Maternal Mortality Review Data

Causes of Pregnancy-related Deaths: 14 MMRCs

	Total		non-Hispanic Black		non-Hispanic White	
	N	%	n	%	n	%
Cardiovascular Conditions [†]	58	13.8	22	13.9	27	13.4
Hemorrhage	55	13.1	17	10.8	27	13.4
Infection	48	11.4	16	10.1	25	12.4
Embolism [‡]	40	9.5	16	10.1	16	8.0
Cardiomyopathy	39	9.3	22	13.9	16	8.0
Mental Health Conditions [§]	37	8.8	--	--	30	14.9
Preeclampsia and Eclampsia	35	8.3	18	11.4	13	6.5

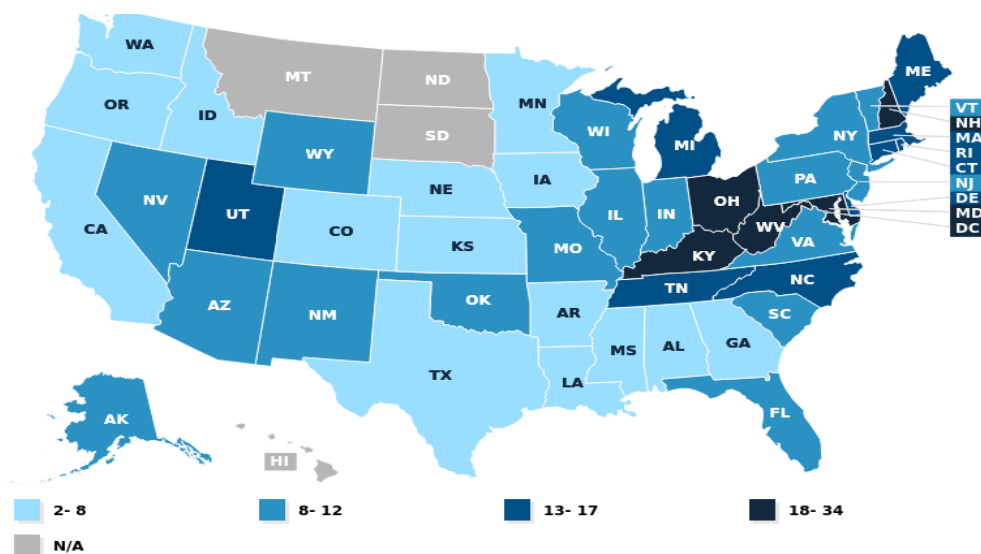
*Specific cause of death was missing or listed as "Unknown" for a total of 34 (7.5%) pregnancy-related deaths.
 Numbers are not presented when cell size is <5. Deaths among women not classified as non-Hispanic Black or non-Hispanic White are included in the total number of deaths.

State MMRCs Funded through ERASE



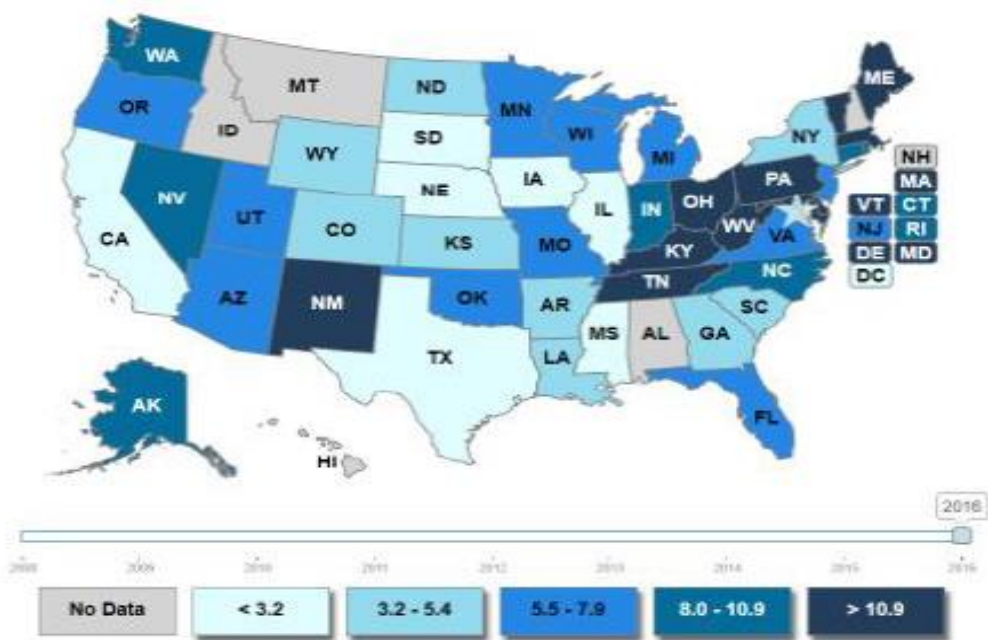
Maternal-Child Health During the Current Opioid Crisis

Opioid-Related Overdose Death among U.S. Women (2017)



SOURCE: Kaiser Family

NAS Admissions
(Rate per 1,000 LB in 2016)



Source : Healthcare Cost and Utilization Project

Maternity care provides a critical opportunity to intervene

Source: Kaiser Family Foundation



- The work of the MMRC is to **identify** and **review** cases of pregnancy associated death, **determine cause(s)** and **preventability**, and to generate **recommendations for action**



New Hampshire MMRC Recommendations for Maternity Care Providers



Support engagement in prenatal care and substance use treatment

- Educate healthcare teams to reduce stigma against people who use substances
- Provide warm handoff from PCP to facilitate engagement in prenatal care
- Improve collaboration between substance use providers and mental health providers

Address social determinants of health

- Assess social determinants and link to services directly from Emergency Department for patients with substance-related complaints
- Increase outreach to unhoused people, prioritizing access to women's services

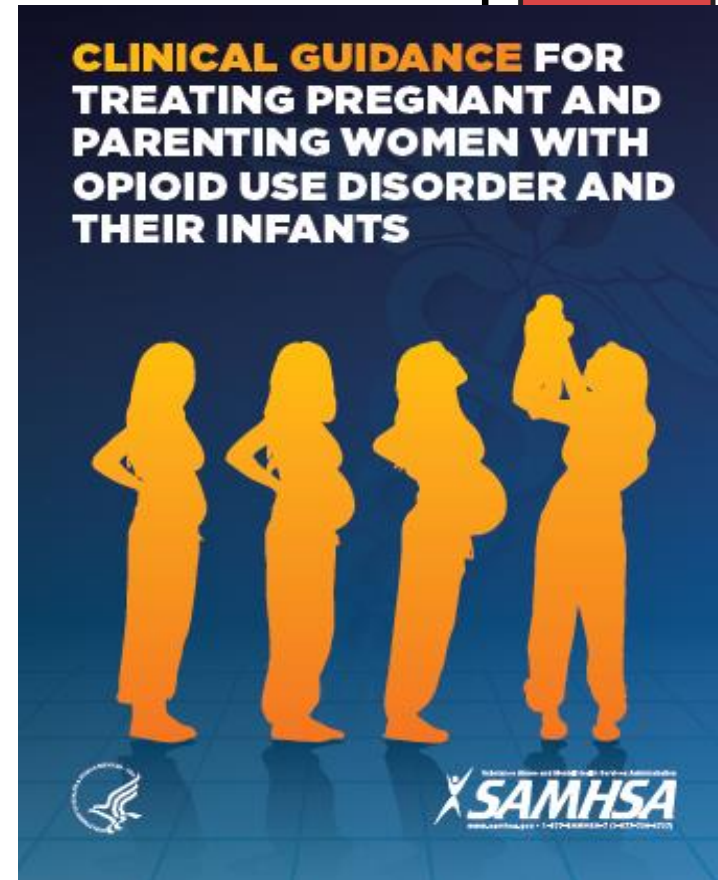
Overdose prevention

- Standardize perinatal education about risk for overdose after pregnancy or any period of abstinence
- Provide naloxone kits and standard education at discharge for postpartum patients with OUD

Available National and Regional Guidance to Improve Maternal Outcomes



NNEPQIN



SAVE YOUR LIFE:

Call 911 if you have:

Get Care for These POST-BIRTH Warning Signs

Most women who give birth recover without problems. But any woman can have complications after the birth of a baby. Learning to recognize these POST-BIRTH warning signs and knowing what to do can save your life.

POST-BIRTH WARNING SIGNS

- ☐ Pain in chest
- ☐ Obstructed breathing or shortness of breath
- ☐ Seizures
- ☐ Thoughts of hurting yourself or your baby

Bleeding, soaking through one pad/hour, or blood clots, the size of an egg or bigger

Incision that is not healing

Red or swollen leg, that is painful or warm to touch

Temperature of 100.4°F or higher

Headache that does not get better, even after taking medicine, or bad headache with vision changes

Call 911 your healthcare provider:

"I had a baby on _____ (Date) and I am having _____ (Specific warning signs)"

become life-threatening if you don't receive medical care right away because:

- Incision that is not healing, increased redness or any pus from episiotomy or C-section site may mean you have an infection
- Redness, swelling, warmth, or pain in the calf area of your leg may mean you have a blood clot
- Temperature of 100.4°F or higher, bad smelling vaginal blood or discharge may mean you have an infection
- Headache (very painful), vision changes, or pain in the upper right area of your belly may mean you have high blood pressure or post birth preeclampsia

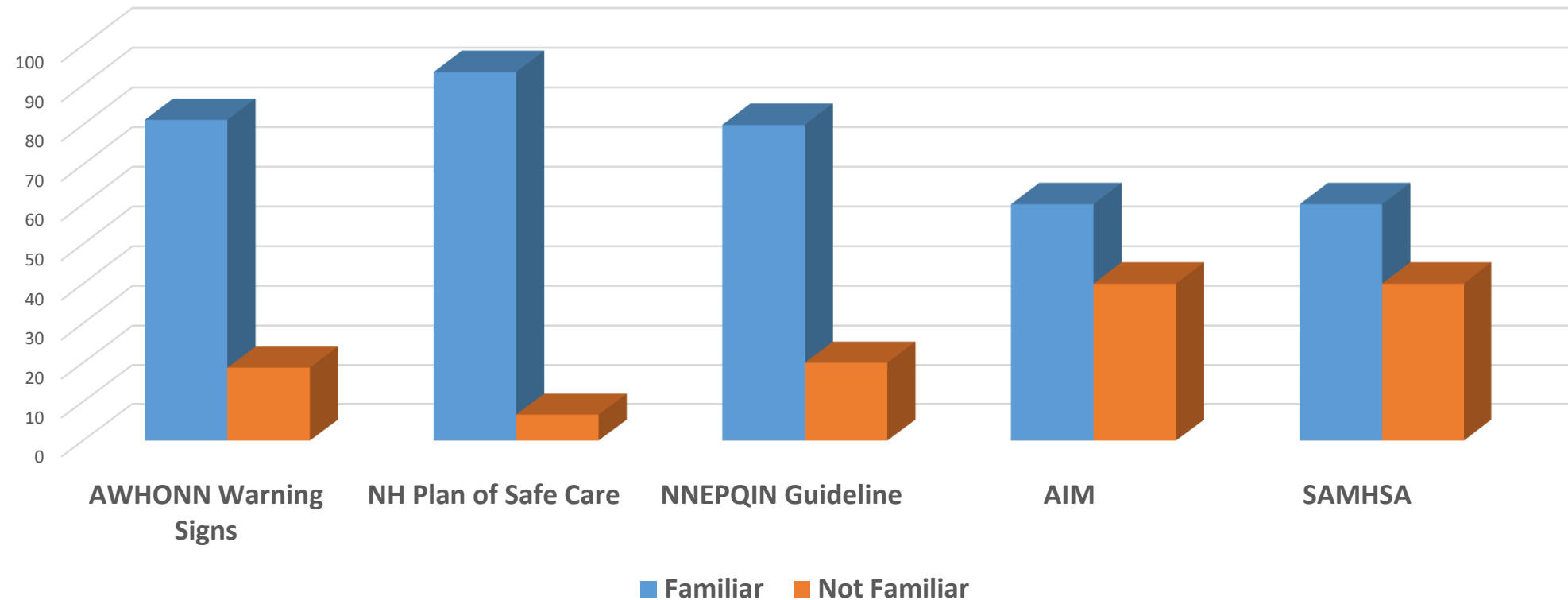
Clinic: _____ Phone Number: _____

This program is supported by funding from Merck, through Merck for Mothers, the company's 10-year, \$100 million initiative to help create a world where no woman dies giving life. Merck for Mothers is known as MD for Mothers outside the United States and Canada.

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NH Hospital Survey Results

Familiarity With National/Regional Guidelines Regarding Perinatal Substance Use Among NH Hospitals



Plan



Distribute 2019 MMRC report

Continue work with CDC to fully utilize MMRIA database

Address 2019 MMRC recommendations

- AWHONN Post-birth warning signs
- Implement AIM patient safety bundles: OUD, Maternal Mental Health and Reducing Racial and Ethnic Disparities
- Report aggregated, de-identified data to inform policy discussion



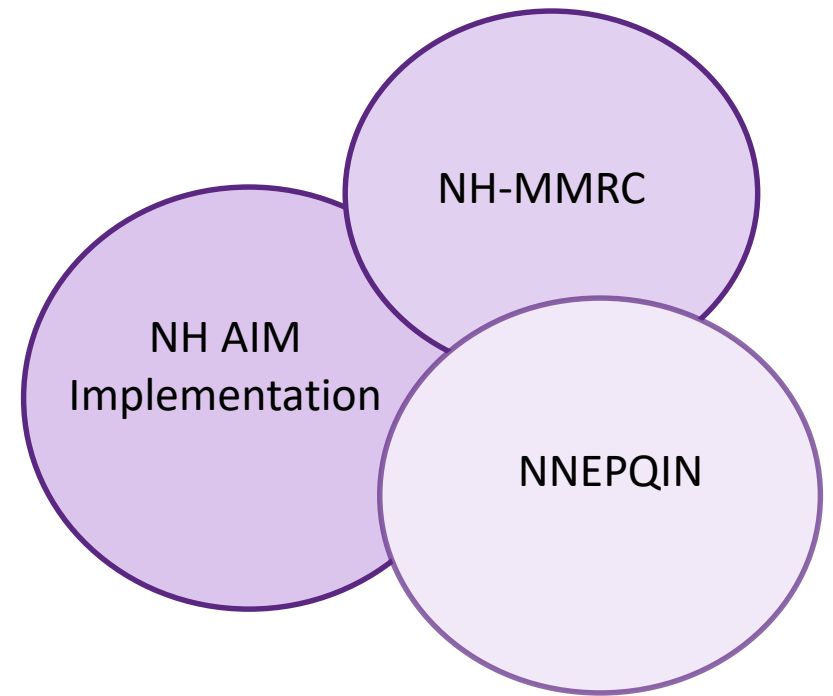
“Hubs and Spokes”

- Birth hospitals serve as anchors for our maternity care system
- Yet the vast majority of maternal deaths in New Hampshire occur outside of the hospital
- Opportunities to intervene begin prenatally, and extend for the postpartum year
- Anyone involved with mother or baby over the perinatal period can be a partner in this work



Our Team

- New Hampshire birth hospitals and their affiliated maternity care providers
- New Hampshire-MMRC
- NNEPQIN/NH-AIM initiative
- Patient and Family Advisors for NH-AIM
- NH Office of Health Equity





POST-BIRTH Warning Signs

Are we doing all that we can to make sure she knows when to call and that we actually “HEAR HER”?

Karen Boedtke RN, BSN, MEd
NNEPQIN Improvement Advisor



Save Your Life Handouts are available in English, Spanish, Arabic and Mandarin Chinese

SAVE YOUR LIFE:

Get Care for These POST-BIRTH Warning Signs

Most women who give birth recover without problems. But any woman can have complications after the birth of a baby. Learning to recognize these POST-BIRTH warning signs and knowing what to do can save your life.

POST-
BIRTH
WARNING
SIGNS

Call 911
if you have:

- ☐ **P**ain in chest
- ☐ **O**bstructed breathing or shortness of breath
- ☐ **S**eizures
- ☐ **T**houghts of hurting yourself or your baby

**Call your
healthcare
provider**
if you have:

(If you can't reach your
healthcare provider,
call 911 or go to an
emergency room)

- ☐ **B**leeding, soaking through one pad/hour, or blood clots, the size of an egg or bigger
- ☐ **I**ncision that is not healing
- ☐ **R**ed or swollen leg, that is painful or warm to touch
- ☐ **T**emperature of 100.4°F or higher
- ☐ **H**eadache that does not get better, even after taking medicine, or bad headache with vision changes

**Trust
your instincts.**
ALWAYS get medical
care if you are not
feeling well or
have questions or
concerns.

**Tell 911
or your
healthcare
provider:**

"I had a baby on _____ and
(Date)
I am having _____."
(Specific warning signs)



CDC “HEAR HER” Campaign covering both pregnancy and postpartum

URGENT MATERNAL WARNING SIGNS



Headache that won't go away or gets worse over time



Dizziness or fainting



Thoughts about hurting yourself or your baby



Changes in your vision



Fever



Trouble breathing



Chest pain or fast-beating heart



Severe belly pain that doesn't go away



Severe nausea and throwing up (not like morning sickness)



Baby's movements stopping or slowing



Vaginal bleeding or fluid leaking during pregnancy



Vaginal bleeding or fluid leaking after pregnancy



Swelling, redness, or pain of your leg



Extreme swelling of your hands or face



Overwhelming tiredness

We are in this *together*!

- NH DHHS and NNEPQIN are working together to help you help her throughout her pregnancy, delivery and postpartum.
- The ERASE MM Grant has allowed us purchase access to the AWHONN Post Birth Warning Signs Educational Materials.
- What can we *all* do to make sure that *she knows* what to be concerned about and that *she is heard* when she calls?
- Do the staff who answer phones in the OB clinic, Community Health Clinic, ED, PCP clinic *understand her special risk* associated with her pregnancy?
- *How can we make sure??*

Your turn to help us and each other with questions and ideas!!

Do you know of a woman who experienced any of these post-birth warning signs that might work with us to share the message?



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NORTHERN NEW ENGLAND
PERINATAL QUALITY IMPROVEMENT NETWORK

ERASE MM

Enhancing Reviews and Surveillance to Eliminate Maternal Mortality



State of New Hampshire
Department of Health and Human Services

Thank you for caring for her and for your support to keep her safe!!



Collaborating to ERASE Maternal Mortality in New Hampshire

SAVE THE DATES!

We will offer these monthly webinars the 2nd Thursday of Every Month

September 10, 2020

October 8, 2020

November 12, 2020

December 10, 2020