

From The National Perinatal Information Center: Taking Care of a Sick Newborn in the NICU... And Taking Care of a Mother's Heart, Too

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The National Perinatal Information Center (NPIC) is driven by data, collaboration and research to strengthen, connect and empower our shared purpose of improving patient care.

For over 30 years, NPIC has worked with hospitals, public and private entities, patient safety organizations, insurers and researchers to collect and interpret the data that drives better outcomes for mothers and newborns.



National Perinatal Information Center

This month, the American Heart Association will recognize American Heart Month for the 56th consecutive year. Heart health continues to be a discussion, no matter the age of your patient. Much of that discussion over the past year has focused on maternal health and heart disease. There is a great deal of discussion in the United States currently that is focused on maternal mortality. And for a good reason. The United States is currently the only developed nation in the world in which the maternal mortality rate is increasing rather than decreasing. The reasons for that are clear in the literature: 1) Racial disparities, which have highlighted the rates of maternal death in the black community, in which black women are dying during or after childbirth at 3-4 times the rate of white women, regardless of education or socioeconomic status. The most recent data from the CDC National Center for Health Statistics (NCHS) described the latest statistics from 2018, which revealed racial and ethnic gaps exist between non-Hispanic black (37.1 deaths per 100,000 live births), non-Hispanic white (14.7), and Hispanic (11.8) women (Centers for Disease Control, 2020). 2) Women are older when they are entering pregnancy. One of the most significant findings from the NCHS report revealed that maternal mortality rates also increased substantially by age, with rates for women aged 40 and over roughly eight times the rate for women under 25 (81.9 and 10.6, respectively) (Centers for Disease Control, 2020).

However, there is one area that is increasingly and unintentionally overlooked, and that is the focus on maternal morbidity. And what confounds this is that at present, there are three (3) definitions of

Severe Maternal Morbidity (SMM) that exist in the literature:

CDC definition of SMM:

Severe maternal morbidity is defined by the Centers for Disease Control (CDC) as the "unexpected outcomes of labor and delivery that result in significant short- or long-term consequences to a woman's health" (Centers for Disease Control, 2020). Severe Maternal Morbidity is identified using administrative hospital discharge data and the International Classification of Diseases (ICD) diagnosis codes and procedures (ICD-10). There are currently twenty-one (21) indicators of severe maternal morbidity:

Acute Myocardial Infarction	Aneurysm	Acute Renal Failure
Adult Respiratory Distress Syndrome	Amniotic Fluid Embolism	Cardiac Arrest/Ventricular Fibrillation
Conversion of Cardiac Rhythm	Disseminated Intravascular Coagulation	Eclampsia
Heart Failure/Arrest during Procedure or Surgery	Puerperal Cerebrovascular Disorders	Pulmonary Edema/Acute Heart Failure
Severe Anesthesia Complication	Sepsis	Shock
Sickle Cell Disease with Crisis	Air and Thrombotic Embolism	Blood Products Transfusion
Hysterectomy	Temporary Tracheostomy	Ventilation

Table 1. Severe Maternal Mortality (SMM). Adapted from Centers for Disease Control, 2020

AIM Definition of SMM Event:

The Alliance for the Innovation of Maternal Health (AIM) lists many of these as diagnosis codes and includes five procedure codes (blood transfusion, conversion of cardiac rhythm, hysterectomy, temporary tracheostomy, and ventilation). (www.safehealthcareforeverywoman.org).

- Pregnant, peripartum or postpartum women receiving four or more units of blood products
- Pregnant, peripartum or postpartum women who are admitted to an ICU as defined by the birth facility
- Other pregnant, peripartum or postpartum women who have an unexpected and severe medical event – at the discretion of the birth facility
- Review form includes guiding questions for OB hemorrhage, hypertensive disease, cardiac disease (including cardiomyopathy), thrombotic disease, and infectious disease (including sepsis).

Joint Commission Definition of SMM:

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The Joint Commission has defined severe, temporary harm focused on severe maternal mortality (SMM) as a patient safety event that occurs from the intrapartum through the immediate postpartum period (24 hours), requiring the transfusion of 4 or more units of packed red blood cells (PRBC) and/or admission to the intensive care unit (ICU) per the American College of Obstetricians and Gynecologists (ACOG), Centers for Disease Control and Society of Maternal-Fetal Medicine (SMFM) (Joint Commission, 2020).

Admission to the ICU is defined as admission to a unit that provides 24-hour medical supervision and is able to provide mechanical ventilation or continuous vasoactive drug support.

National Perinatal Information Center and Maternal Hypertension

The National Perinatal Information Center (NPIC) has been a national leader in perinatal and neonatal data analytics for over thirty-five years. On any given year, NPIC has an average of 325,000 linked mother/baby discharge records per year (for example, 07/2018 – 06/2019 discharges, there were a total of 311,377 obstetrical records and 299,651 newborn charts linked, for a total of 611,028 perinatal discharges). One of the linked diagnosis codes tracked is that of hypertension and subsequent admission to the NICU at birth.

Over time, it becomes clear that discharge data with a maternal diagnosis of hypertension during hospitalization for childbirth has been a factor in neonatal admission to the NICU, and in fact, has been rising in the NPIC Database from 2012-2018. While there could be a number of variables and factors within the decision to admit a baby to the NICU, it also warrants attention to ensure the mother is receiving the care needed and necessary to assure her stabilization and continued recovery after childbirth. When the mother of your NICU patient diagnosed with hypertension is sitting at the bedside with her sick newborn, does she appear well? Or ill-appearing? What education is she receiving to ensure she is ready for discharge herself? While the focus of care naturally flows to the sick newborn, it is important to ensure that the mother is cared for as well, and is recognizing warning signs of what to report to her own provider. As the mother will be caring for her baby (or babies), ensuring she is getting the care and resources she needs is essential to the optimal outcomes of the baby. AWHONN (Association of Women's Health, Obstetric, and Neonatal Nurses) has developed a POST-BIRTH Save Your Life discharge education program that can be used for postpartum education and empowering women to seek out medical attention for signs of complications after childbirth. This flyer is available at www.AWHONN.org and may be ordered free of charge for hospitals to use in their postpartum discharge education programs.

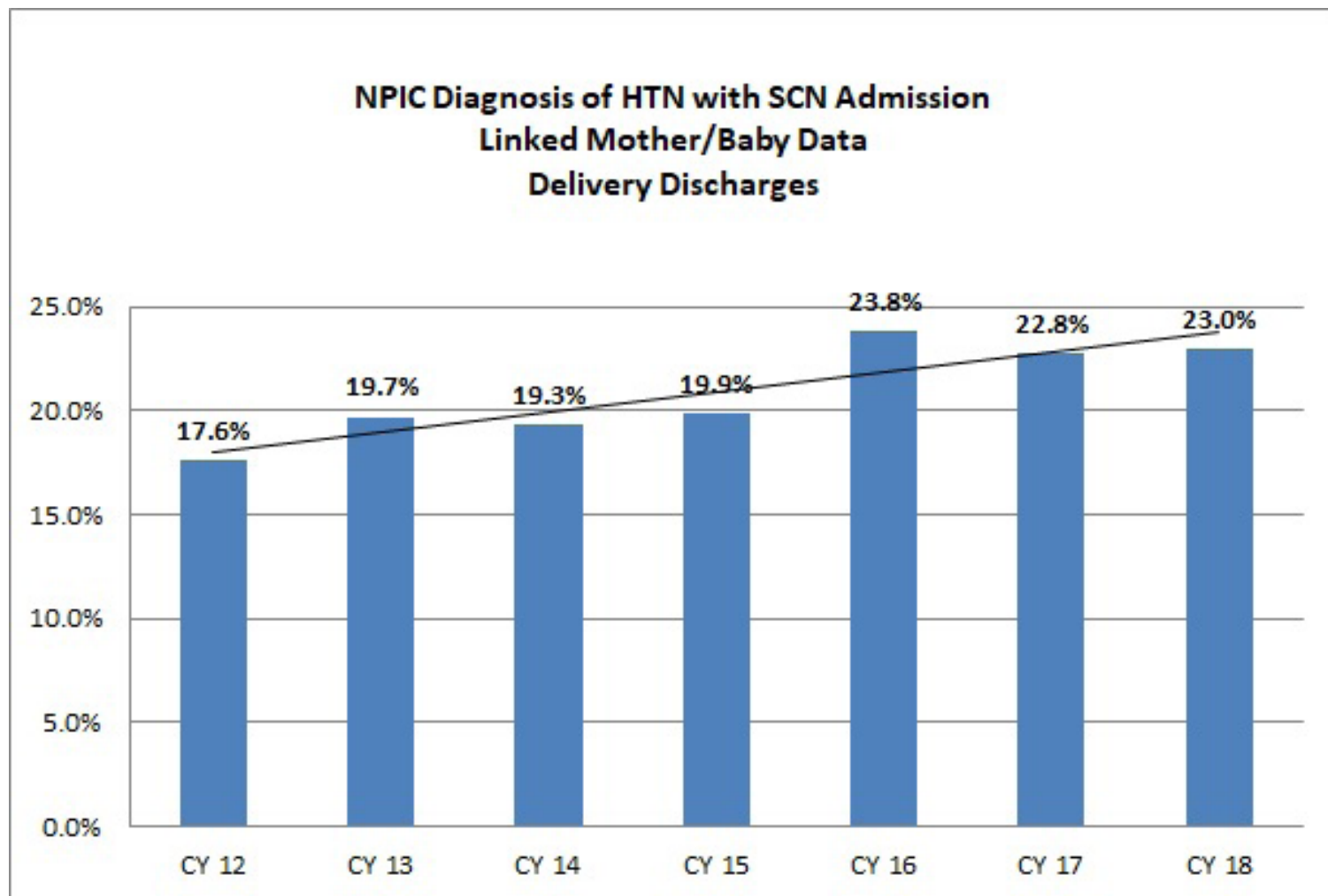


Figure 1. NPIC Maternal Diagnosis of Hypertension with Special Care Admission, 2012-2018

February is American Heart Month and a month that brings attention to heart disease, the number one killer of Americans. During this American Heart Month, it is important to recognize that pregnancy can take a toll on a mother's heart. And that toll can be felt much more profoundly when she finds her newborn is in NICU.

The author has no conflicts of interests to disclose.

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