



Opioid-related adverse pregnancy outcomes

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Patient-Centered Outcomes Research (PCOR) Trust Fund 2018 funding – Division of Vital Statistics

Overall Project goals:

- ▶ Strengthen the mortality data infrastructure to enhance researchers' ability to investigate and publish results on overdose deaths involving opioids by:
 - ▶ Redesigning the Medical Mortality Data System to electronically code and process larger percent of death certificate records
 - ▶ Incorporate supplemental information from death certificate literal text regarding drugs as new variables in the National Death Index (NCD) and National Vital Statistics Mortality data files
 - ▶ Improve the specificity of drug information on death certificates supplied by states
 - ▶ Improve the precision and timeliness of national reporting on drug deaths
 - ▶ Improve data collection and dissemination of opioid-related data in alignment with researchers' needs



Project goals (cont)

Pregnancy outcomes

Study the effects of opioids and other drugs on birth outcomes using birth, death and fetal death data and/or other government health data

- ▶ Two projects by the DVS's Reproductive Statistics Branch Birth and Infant Health team begun in mid-2018
 1. Drug-related infant deaths using the linked vital statistics birth/infant death file
 2. Neonatal Abstinence Syndrome (NAS) and its potential for reporting in birth certificate data



Neonatal Abstinence Syndrome

Definition and clinical signs

- ▶ Neonatal abstinence syndrome (NAS) is a postnatal drug withdrawal syndrome that occurs primarily among opioid-exposed infants shortly after birth, often manifested by
 - ▶ central nervous system irritability
 - ▶ autonomic overreactivity
 - ▶ gastrointestinal tract dysfunction. *

- ▶ NAS usually appears within 72 hours of birth (within BC reporting frame)

NOTE: NAS withdrawal symptoms can mimic other newborn conditions.

*From the American Academy of Pediatrics

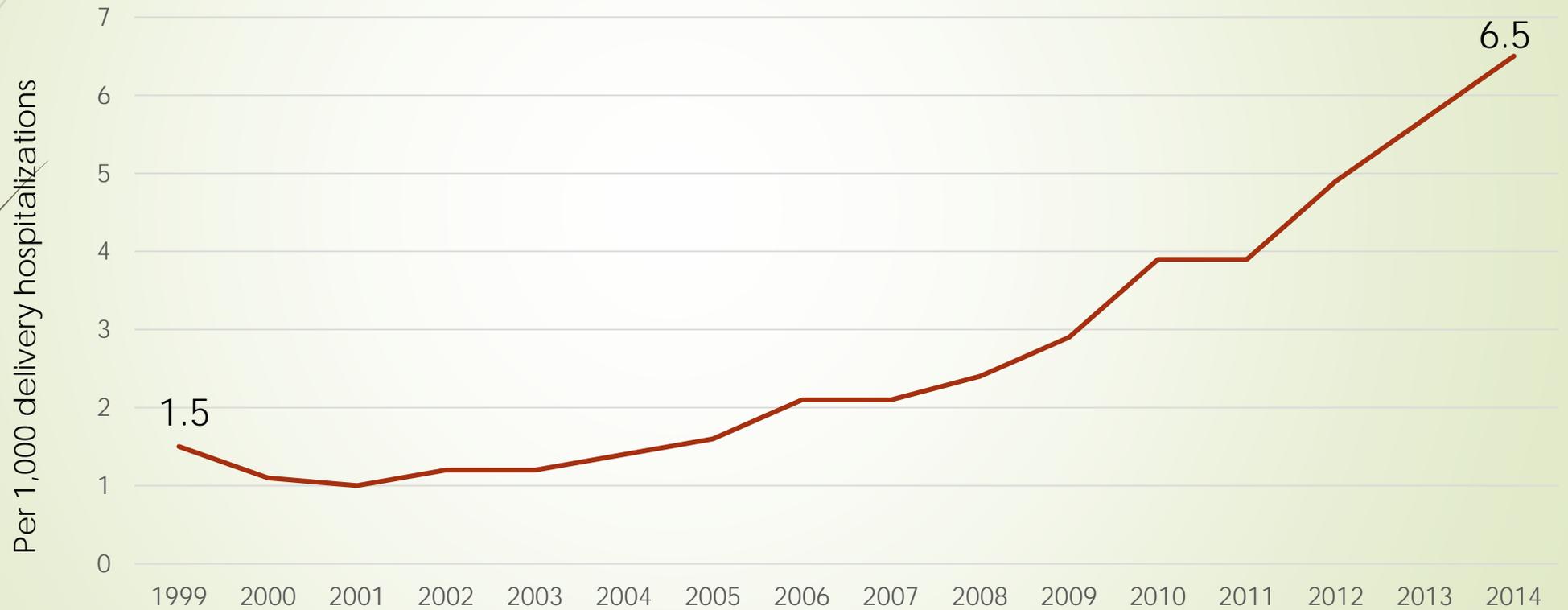


Why review NAS for the birth certificate?

- ▶ Opioid use disorder has increasing among pregnant women
- ▶ Opioid use during pregnancy is associated with adverse maternal and neonatal outcome
- ▶ NAS incidence has been on the rise

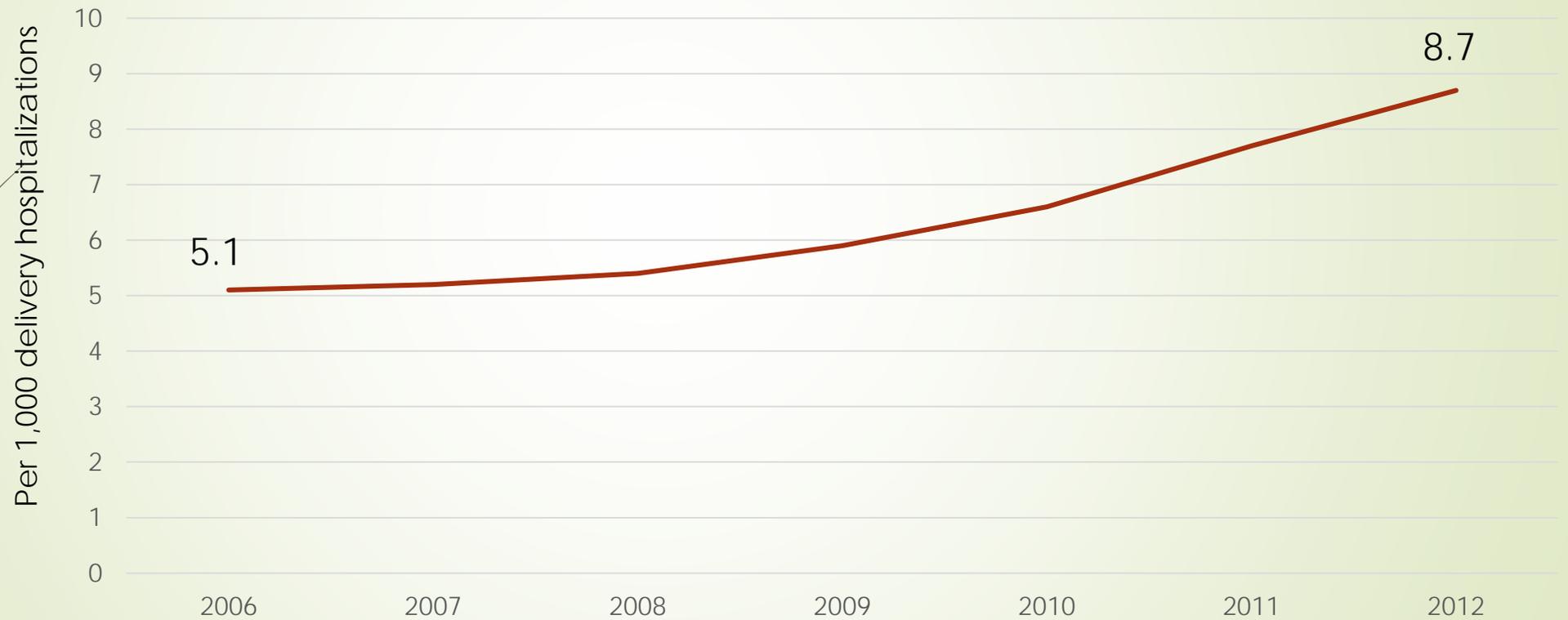
- ▶ NAS is currently a reportable condition in only 7 states.
- ▶ No national reporting system (Hospital Discharge data?)

Maternal opioid use disorder at delivery hospitalization: 30 States and DC



*National inpatient sample (NIS) and state inpatient database, Health care cost and utilization project (HCUP), 1999-2014. Adopted from Haight SC, Ko JY, Tong VT, Bohm MK Callaghan WM. Opioid use disorder documented at delivery hospitalization – United States, 1999-2014. MMWR Vol 67(31) August 10, 2018.

Neonatal hospitalization rate related to substance use:* 38 states, 2006-2012



*State Inpatient Database (SID), Health care cost and utilization project (HCUP), 1999-2014. Adopted from Fingar KR, Stocks C, Weiss AJ, Owens PL. Neonatal and maternal hospital stays related to substance use, 2006-2012. HCUP Statistical Brief #193, July 2015.



DVS NAS project

- ▶ We are collaborating with the Birth Data Quality Workgroup to review the potential for the collection of NAS in birth certificate data
- ▶ The Workgroup is a long-standing collaboration among NCHS, NAPHSIS and the individual vital statistics jurisdictions
- ▶ The Workgroup is tasked with reviewing and recommending to NCHS/NAPHSIS leadership future changes, where appropriate, to items on the 2003 US Standard Birth Certificate
- ▶ Previous review by the Workgroup resulted in dropping 12 non-performing items from the national birth file



NAS Birth certificate reporting states

- ▶ Connecticut, since 2016
- ▶ New Jersey, since 2016
- ▶ West Virginia, since 2016

- ▶ New Hampshire, July 2018 – present. Situational Surveillance System. Short term test. Item(s) not perfectly consistent with NAS
 - ▶ Was the infant monitored for signs of opioid withdrawal or neonatal abstinence syndrome?

- ▶ All four states are collaborating with us on this project!



A few stats on NAS from our state partners



NAS survey of states

- ▶ Birth Data Quality Workgroup developed short survey
 - ▶ to determine if there were legal impediments to states collecting NAS on birth certificates (potential association with illicit drug use)
- ▶ Survey fielded by NAPHSIS in October, 2018
- ▶ 39 states and one territory responded

RESULTS

- ▶ 2 states, CA and WA responded that state law precluded collection of NAS on their birth certificates
- ▶ 5 states were unsure if state law would be an issue in NAS collection
- ▶ 1 state indicated statute required following US Standard Birth Certificate
- ▶ 32 states reported no known prohibitions



Survey results – concerns with collecting NAS on BC

- ▶ Is NAS typically diagnosed within the birth reporting time period?
- ▶ Could the BC information be used against the mother?
 - ▶ Prosecuted for drug use?
 - ▶ Child abuse?
 - ▶ Custody agreements?
- ▶ Data quality and completeness is particularly an issue in reporting a potentially negative maternal behavior
- ▶ Lack of specificity of the NAS definition; differences in definitions used by hospitals



Survey results – concerns with collecting NAS on BC

- ▶ Additional hospital reporting burden
- ▶ Additional funding needed for states to cover cost of training and change to electronic systems
- ▶ Changes to state systems would take some time
- ▶ Information on NAS already available from hospital discharge database
- ▶ Questionable value of NAS to some states because of lower incidence opioid abuse in some states
- ▶ A couple of states indicated openness to adding NAS
- **Our review will attempt to address each of these concerns**



Next steps

- ▶ Compare birth certificate data with hospital discharge or other state NAS data for the 3 states using linked birth certificate/discharge/other data files
 - ▶ Accuracy and completeness of data
 - ▶ If NAS diagnosis is within birth certificate reporting time frame
- ▶ Council of State and Territorial Epidemiologists meeting this month to attend to develop a standardized NAS definition – we plan to attend.

