

# Neonatal Abstinence Syndrome or Opioid Exposure? Inconsistent Coding of Opioid Exposure among Mothers and Infants

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## Introduction

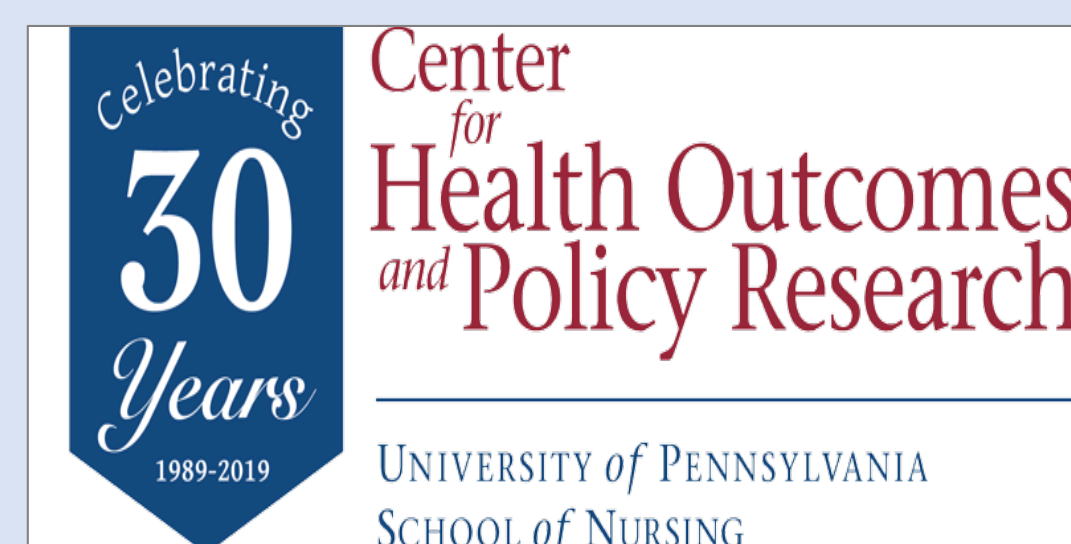
- Increased rates of opioid use disorder (OUD) among pregnant women has led to a five-fold increase in infants with neonatal abstinence syndrome (NAS) in the past ten years.
- For each infant diagnosed with NAS, however, there are 28 opioid exposed (OE) infants.
- OE infants, like NAS infants, are at risk for preterm birth, low birthweight, future adverse health outcomes, and increased health care use.
- Most studies focus on NAS infants, leaving OE infants an understudied population.

## Objectives

- The study objectives were to evaluate the alignment in diagnostic coding of OUD, OE and NAS in mothers and infants and to compare the coding of OE vs NAS among infants

## Methods

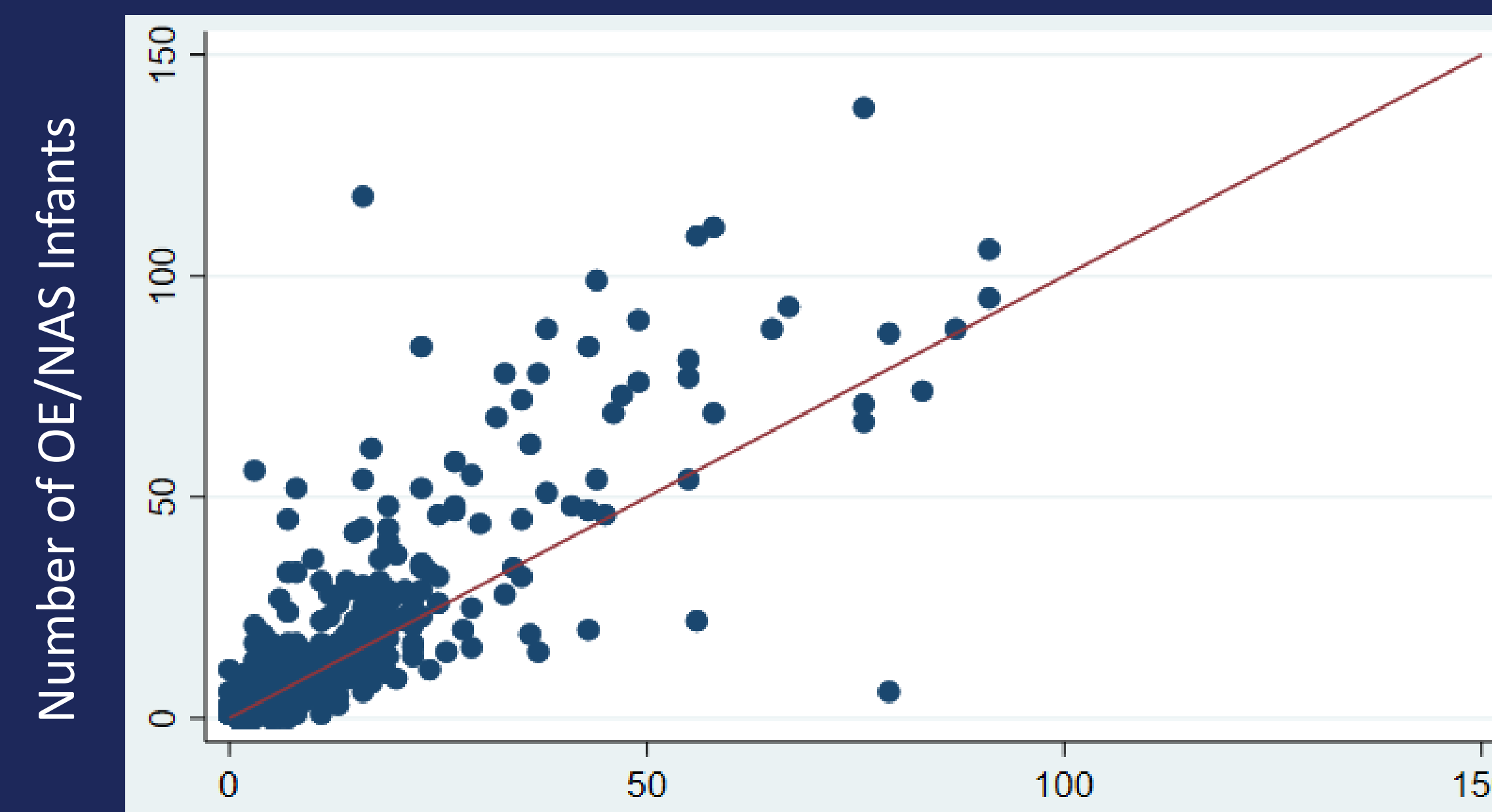
- Descriptive study of hospital discharge abstracts from three states (California, New Jersey, Pennsylvania) in 2016.
- ICD-10 and DRG codes were used to flag mothers with OUD (F11, T400-T404 and T406), infants with OE (P04.14) and infants with NAS (P96.1).
- Included hospitals had at least one OUD mother or one OE or NAS infant.



## Conclusion

- About 20% fewer mothers are coded with OUD than infants are coded with OE/NAS.
- NAS is coded at almost three times the rate of OE in infants even though NAS is a subset of OE.
- The diagnostic coding of OUD mothers and OE/NAS infants within the same hospital is inconsistent.
- In at least 10% of hospitals, there are OUD mothers with no OE/NAS infants or OE/NAS infants with no OUD mothers.

Figure 1: Number of of OE/NAS Infants vs. Number of Mothers with OUD



Number of mothers with OUD

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## Results

- There were 880,923 mothers and 896,433 infants in 389 hospitals.
- 0.6% of mothers were diagnosed with OUD and 0.75% of infants were diagnosed with OE or NAS.
- Three quarters of infants were diagnosed with NAS alone and one quarter with OE alone. Hardly any were diagnosed with both (1.5%).
- Per hospital, there were more OE/NAS infants than mothers with OUD (18.4 vs 14.5).
- One in ten hospitals had either mothers with OUD but no OE/NAS infants or OE/NAS infants but no mothers with OUD

## Implications for Policy and Practice

- We infer from the small fraction of infants with a diagnosis of OE relative to triple the number with a diagnosis of NAS that there is a vulnerable population of infants with OE who are not identified and therefore do not receive critical additional support or services during and after hospitalization.
- Provider and medical record coder attention to thorough documentation of prenatal OE/NAS and maternal OUD is needed.

