

# Improving Perinatal Opioid Use Disorder Identification through Electronic Medical Records Utilization

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### INTRODUCTION:

- From 2010 to 2017, maternal opioid-related diagnoses increased from 3.5 to 8.2 per 1,000 delivery hospitalizations.<sup>1</sup>
- Identifying opioid use disorder (OUD) during the perinatal period is crucial for improving maternal and neonatal outcomes.<sup>2</sup>
- However, current data collection methods and diagnostic coding systems present challenges in accurately capturing OUD prevalence in pregnant patients.<sup>3</sup>

### STUDY OBJECTIVE:

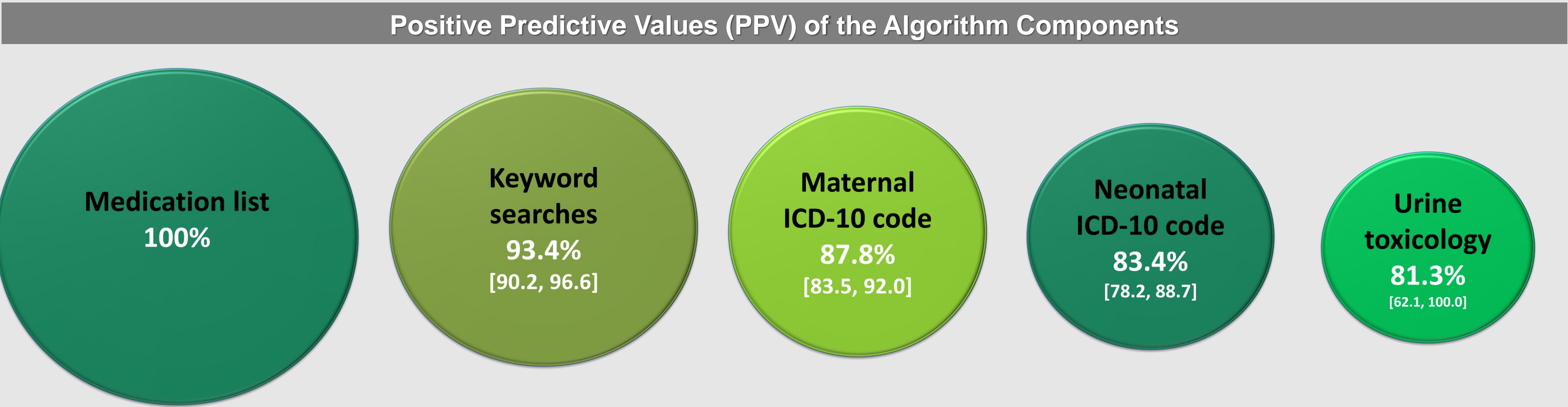
- To develop and validate an algorithm for identifying OUD in pregnant patients using Electronic Medical Records (EMRs) data

### METHODS:

- A cohort of pregnant patients delivering at a single healthcare institution from 1/1/19 to 9/1/21 was used.
- The algorithm included five components: (1) ICD-10 coding of the pregnant patient’s chart (F11, O99.320-O99.325, T40.1-T40.6) (2) ICD-10 coding of the neonatal chart (P96.1, P04.14), (3) keyword searches, (4) urine toxicology testing, and (5) outpatient medication list at delivery.
- Manual chart reviews were conducted to confirm OUD diagnoses based on established criteria.
- Positive predictive values (PPV) were assessed for each algorithm component.
- Descriptive statistics were performed.



### RESULTS:

- The algorithm identified 334 charts from 16,915 deliveries, with **256 (76.6%)** true cases of OUD were confirmed.
- The overall PPV of the algorithm was **76.7%**. If two or more algorithm components were present, the PPV was 100%.



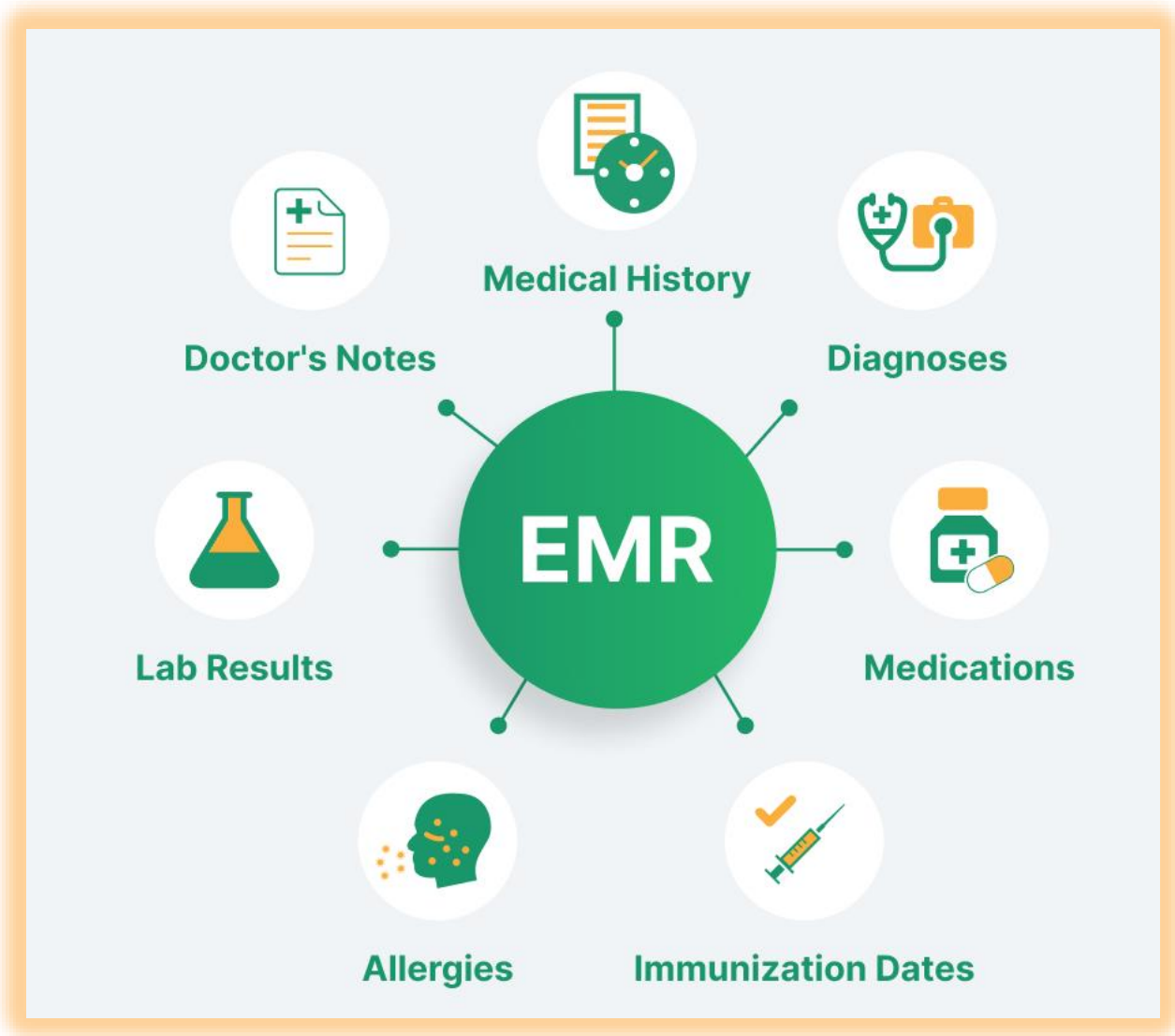
Maternal and Infant Outcomes			
Maternal Outcomes (n = 256)		Neonatal Outcomes	
Characteristics (by majority)		Fetal/neonatal death	2%
Non-Hispanic White	77%	Neonatal Opioid Withdrawal Syndrome*	269 infants
Insured by Medicaid	80%	Infants treated with medication	25%
Median age at delivery	32 years	Median NICU length of stay (LOS)	5 days
Median gestational age (GA) at delivery	38 weeks	Breastfeeding prior to discharge	66%
OUD Status		Readmission after discharge	3%
On MOUD	54%	Discharged home to a biological parent	75%
In recovery without meds	23%		
Active opioid use	29%		
On long-term opioid use for chronic pain	12%		
Prenatal Outcomes			
Received prenatal care (PNC)	93%		
1 <sup>st</sup> trimester	48%		
2 <sup>nd</sup> trimester	36%		
3 <sup>rd</sup> trimester	9%		
Median # of visits	8		
Median GA at first visit	13 weeks		
Screened for Hepatitis C	61%		
Postpartum Outcomes			
Attended postpartum visit	29%		
Postpartum depression screen	26%		
Postpartum readmissions	2%		

\*1 set of triplets and 9 sets of twins



### CONCLUSION:

- This study highlights the effectiveness of a multi-faceted approach in accurately identifying OUD among pregnant patients using EMR data.
- ### PUBLIC HEALTH IMPLICATIONS:
- This algorithm can refine OUD identification strategies, guiding research, clinical practices, and policies to address the perinatal opioid crisis.
  - Furthermore, the algorithm provides a foundation for future research aimed at improving algorithms utilizing EMRs to detect OUD in pregnant patients.
  - Enhanced identification of OUD in pregnant patients facilitates timely interventions and targeted support services, improving maternal and neonatal health outcomes.



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This multifaceted EMR-based algorithm demonstrates improving accuracy in identifying patients with OUD, enhancing early intervention and outcomes for affected families.