

# Rising Injection-Related Infections Amid Declining Overdose Deaths in the Southeast

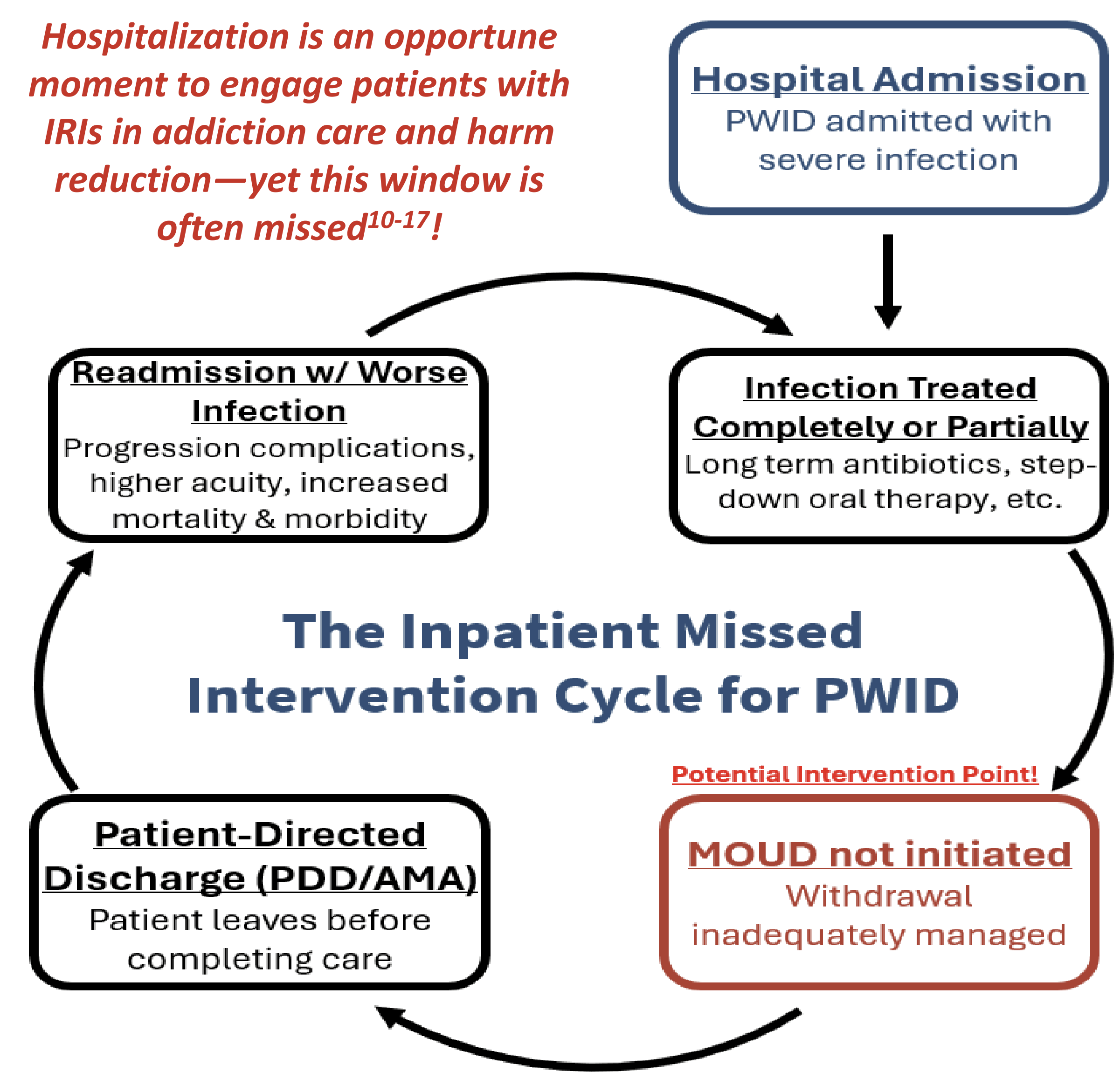
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## Falling Overdoses, but Rising Hospitalizations

- People Who Inject Drugs (PWID) are frequently hospitalized for Injection Related Infections (IRIs), including Infective Endocarditis (IE), Skin and Soft Tissue Infection (SSTI), Bacteremia, and Vertebral Osteomyelitis/Epidural Abscess<sup>1-4</sup>.
- Prior literature highlights the substantial challenges in identifying IRI hospitalizations among PWID for population level surveillance and analysis<sup>5,6</sup>.
  - There is no uniform definition or standardized clinical criteria for what constitutes an IRI.
- We developed and validated an ICD-10 algorithm through manual chart review to identify IRI hospitalizations in a large regional hospital system.
- Improved identification of IRI hospitalizations is essential for accurate surveillance, resource allocation, and evaluation of addiction-focused inpatient interventions.
- While national trends show declining opioid-related overdose (OD) deaths; we sought to evaluate if IVDU-related sequelae followed similar trends<sup>7-9</sup>.

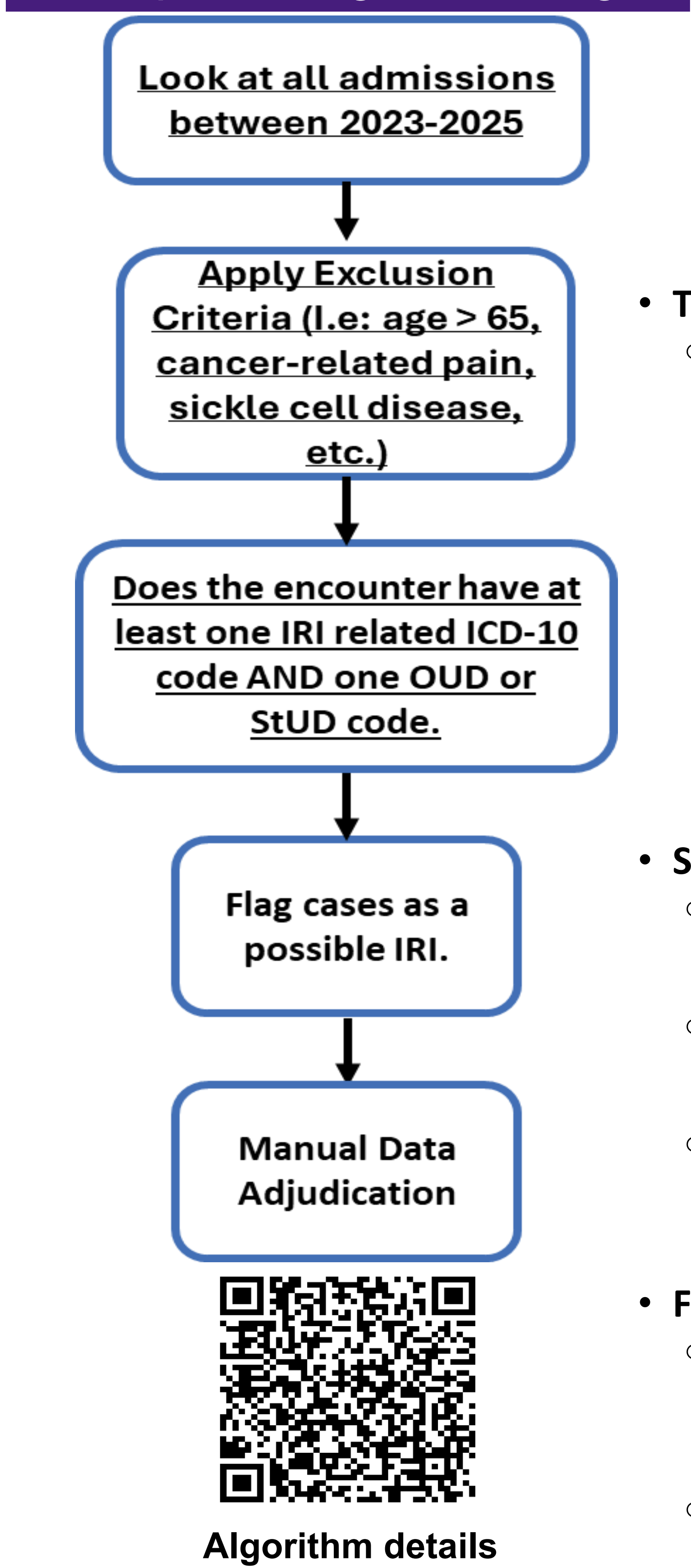
## Clinical Reality, Why do we care?



## Identifying the Population

- **Setting:** Academic-private hybrid hospital system with a high prevalence of hospitalizations among PWID for IRIs.
- **Population:** Hospitalized adults with Opioid Use Disorder (OUD) or Stimulant Use Disorder (StUD) and an IRI.
- **Timeframe:** January 1, 2023 – January 1, 2025.
- **Approach:** Development and validation of an ICD10 algorithm to accurately identify cases of IRI via manual chart review
- Evaluate post-COVID trends in IRI admissions in a large hospital system in comparison to overdose data.

## Simplified Algorithm Logic

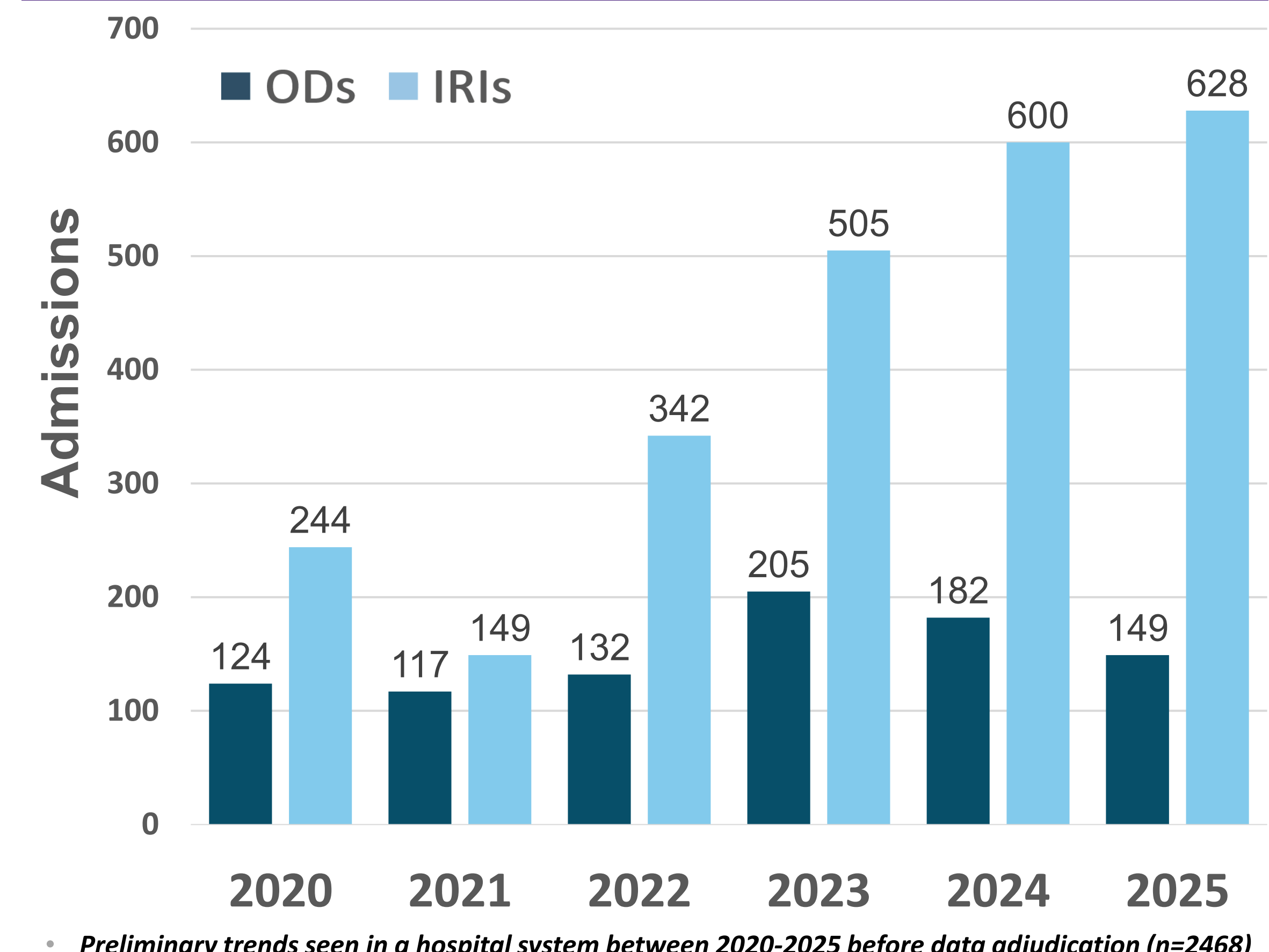


## Data Adjudication and Algorithm

Algorithm Performance (n=1,043)			
True Positives	Suspected Positives	False Positives	Positive Predictive Value (PPV)
710	158	175	83%

- **True Positive:**
  - Evidence<sup>1</sup> of a listed infection treated during the hospital stay.
    - Evidence<sup>2</sup> of IVDU documented in index admission. **AND**
    - Evidence of OUD<sup>3</sup> or opioid overdose in index admission with IVDU not qualified. **OR**
    - Evidence of IVDU documented in an encounter 12 months prior or after index admission. **OR**
    - Evidence of OUD documented with IVDU not qualified in an encounter 12 months prior or after index admission. **OR**
- **Suspected Positive:**
  - IVDU/OUD as outlined above **AND** no identifiable individual IRI infection listed (with exceptions<sup>4</sup>) **OR**
  - IVDU/OUD as outlined above **AND** patient left AMA prior to identification of infection being worked up. **OR**
  - IRI as above **AND** evidence of OUD documented with IVDU not qualified<sup>3</sup> in an encounter 12 months prior or after index admission **AND** at facility without a Fentanyl screening test
- **False Positive:**
  - Either an IRI infection is not found, or no evidence is found of IVDU or OUD as above criteria outlined. I.E. case fails to meet any of the above criteria. **OR**
  - If IRI is deemed as possible surgical complication from surgery in prior 3 months.

## IRIs Are Rising Despite Stable OD Admissions



## Future Directions / Implications

- **Inform policy and funding priorities:** Use observed divergence between overdose and IRI trends to emphasize continued investment in hospital-based addiction care and implementation research during hospitalization.
- **Strengthen surveillance and data integration:** Link hospital system data, Medicaid claims, LDH longitudinal and mortality data to improve monitoring of IRIs and current understanding of addiction care delivery, outcomes, and associated costs.
- **Improve identification methods:** Refine ICD-10–based algorithms using natural language processing (NLP) to enhance sensitivity and specificity for IRI and OUD case identification.
- **Plan for workforce and capacity needs:** Evaluate capacity requirements for peer support services, addiction medicine clinicians, and substance use navigators across inpatient and outpatient settings.
- **Engage stakeholders:** Apply a Community-Based Participatory Research (CBPR) approach to incorporate perspectives from patients with lived experience, providers, and acute and long-term care staff.
- **Expand clinician education:** Target hospitalists and inpatient teams with education on MOUD initiation, harm reduction, and transitions of care for patients hospitalized with IRIs.

## Acknowledgements, References, and Poster (QR Code)

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