

## **SURVEILLANCE OF OPIOID-RELATED EMERGENCY DEPARTMENT PRESENTATIONS IN NSW**

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**Introduction:** NSW Health conducts ongoing surveillance of drug and alcohol related harms. Emergency department (ED) surveillance data enables timely intelligence, but identifying drug-related presentations is challenging. Diagnoses are often non-specific to drug types and specific diagnoses are not consistently used across EDs.

**Method:** Near real-time ED surveillance data were sourced from the NSW Public Health Rapid, Emergency, Disease and Syndromic Surveillance (PHREDSS) system. Search terms specific to heroin, fentanyl, codeine, opioid agonist treatment medications, and other pharmaceutical opioids were tested by searching diagnosis, presenting problem and triage nursing fields. Records related to allergies, appropriate medical use or previous history of use were excluded. We manually reviewed 3,000 randomly sampled records to determine if text searching correctly identified opioid-related presentations (including adverse reaction, overdose, dependence, withdrawal or drug-seeking behaviour). To reduce high false positive rates for opioid-related presentations with appropriate medical use, text searching was restricted to presentations related to mental health, alcohol problems, poisoning/overdose, and illicit drugs.

**Key findings:** Applying a keyword search enables accurate categorisation of opioid-related ED presentations by opioid type. Heroin was readily captured by text searching (positive predictive value=88%).

Restricting the text searching to a sub-group of ED presentations reduced false positive rates substantially. Across opioid types: PPV 70-85%, negative predictive value 67-95%, sensitivity 31-50% and specificity 87-99%.

**Discussions and conclusions:** There is no perfect keyword search strategy. As NSW Health is interested in timely surveillance of trends in opioid-related harms, we value PPV over sensitivity. We accept an undercount to minimise false positives and false negatives for surveillance purposes.

**Implications for practice or policy:** Heroin-related presentations have remained relatively stable between 2011-12 and 2018-19. Codeine-related presentations have declined since 2015-16, and markedly since 2017-18.

**Implications for translational research:** Timely monitoring of opioid harms in ED is best used as part of a comprehensive surveillance approach.

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