Trends in Hospital Utilization for Opioid Overuse and Drug-Dependent Newborns in Missouri

Implications for Prescription Drug Monitoring Interventions
Hospital Utilization for Opioid Overuse in Missouri

2006-2015
Analgesic Opioid Addiction

• Analgesic (prescription) opioids include commonly-prescribed painkillers
  ➢ Oxycodone, hydrocodone, codeine, morphine, Vicodin, Percocet, etc.
  ➢ Highly addictive, narcotic, stimulate pleasure centers in brain
  ➢ Chemical composition of analgesic opioids very similar to heroin
  ➢ Growing evidence links analgesic opioid dependence to eventual heroin use
  ➢ 2.1 million people in the U.S. misuse opiates and half a million are addicted to heroin
  ➢ Hospitalization for opioid overuse rising dramatically across the U.S.
    – Fastest growth in the Midwest
    – Among females and the elderly

Rate of Hospital Utilization for Analgesic Opioid Overuse in Missouri and Percent Change from 2006

RATE OF HOSPITAL INPATIENT AND EMERGENCY DEPARTMENT VISITS FOR ANALGESIC OPIOID OVERUSE AND CUMULATIVE PERCENT CHANGE IN MISSOURI, 2006-2015

Source: Hospital Industry Data Institute.
Hospital Utilization for Analgesic Opioid Overuse by Payer

RATE OF HOSPITAL INPATIENT AND EMERGENCY DEPARTMENT VISITS FOR ANALGESIC OPIOID OVERUSE IN MISSOURI, CUMULATIVE PERCENT CHANGE BY PAYER, 2006-2015

Source: Hospital Industry Data Institute.
Rate of Hospital Inpatient and Emergency Department Visits for Analgesic Opioid Overuse in Missouri by Senate District, FY2015

Source: Hospital Industry Data Institute.
Missouri Infants Born with Drug Withdrawal: Neonatal Abstinence Syndrome

2006 - 2016
Neonatal Abstinence Syndrome (NAS)

- Postnatal drug withdrawal syndrome most prevalent in opioid-exposed infants shortly after birth
  - Manifests in central nervous irritability, GI tract dysfunction and overactive autonomic response
  - Limited evidence on long-term effects
  - National rates of NAS increased by 300% between 1999 and 2013
    - 1.5 per 1,000 births in 1999
    - 6.0 per 1,000 births in 2013


- Missouri NAS cases identified with ICD-9 and ICD-10 CM diagnosis codes:
  - FY 2006-2015: ICD-9 CM code 7795 (newborn drug withdrawal syndrome)
  - FY 2016: ICD-10 CM code P961 (neonatal withdrawal symptoms from maternal use of drugs)

Source: Hospital Industry Data Institute, 2006-2016 Hospital Inpatient Discharge Databases
Number of Infants Born with NAS and Percent Increase from 2006

MISSOURI INFANTS BORN WITH NAS AND CUMULATIVE PERCENT CHANGE, 2006-2016

Total Number of Births and NAS Births by Payer

- Moderate decrease in total births in Missouri between 2006 and 2016
- Moderate increase in NAS for non-Medicaid births
- Dramatic increase in NAS for Medicaid births; 424 additional cases accounting for 86% of the total statewide increase between 2006 and 2016

Statewide, the NAS rate was 1.2 per 1,000 births in 2006 & 7.9 in 2016.

The NAS rate for Medicaid newborns was more than double the statewide rate in 2016.

Average charges for a Medicaid NAS birth are $63,000 vs. $14,500 for other births.

This implies $23,800,000 in additional hospital charges for 493 Medicaid NAS births in FY2016, at a cost to Medicaid of nearly $10 million.

Missouri Infants Born with NAS: Rate per 1,000 Births by County, 2012-2016

- NAS rates calculated at the county-level for all births occurring during the most recent five-year period to increase reliability.

- Rates highest in rural, south-central Missouri and St. Louis city.

- The five-year statewide rate was 6.16 NAS births per 1,000.

- At 26.37 NAS births per 1,000 Iron County more than quadrupled the statewide rate during the same period.

Missouri Infants Born with NAS: Rate per 1,000 Births and Percent Change by Senate District, 2012-2016

- Senate Districts 4, 5 and 16 had the highest NAS rates between 2012 and 2016.
- Senate Districts 7, 8, 27, 30, 32 and 33 had the highest rates of growth in NAS with each experiencing an increase over 170%.