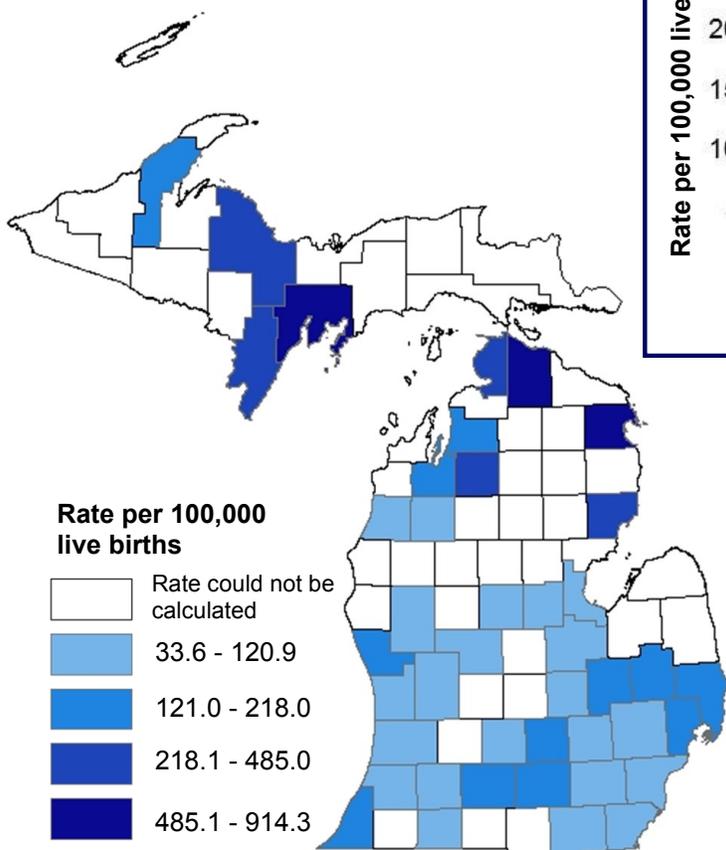


# Neonatal Drug Withdrawal among Michigan Infants

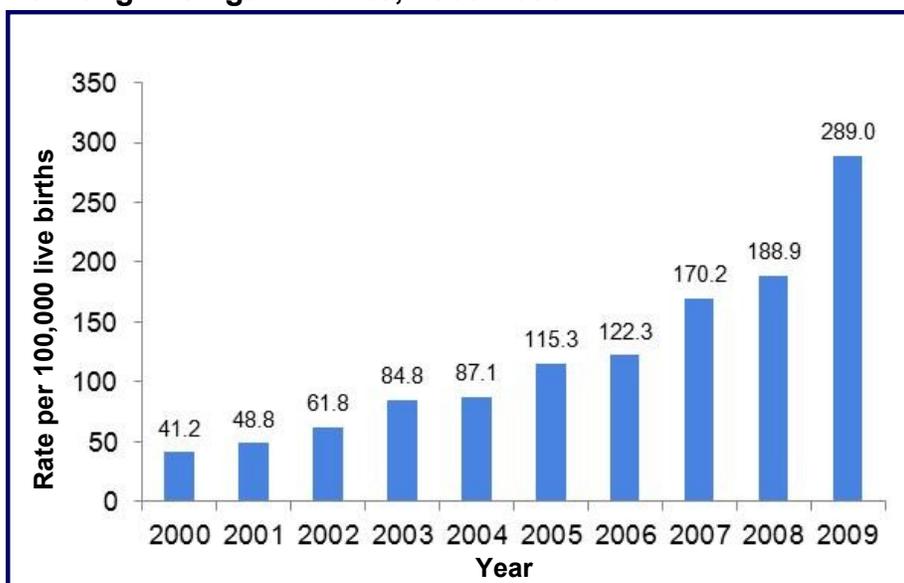
- When mothers use illicit or prescription drugs during the pregnancy, infants can present with drug withdrawal symptoms after birth, called neonatal withdrawal syndrome (NWS).
- The risk for NWS is greatest when the mother uses prescription pain relievers known as opioids analgesics or heroin during the pregnancy.<sup>1,2</sup>
- Between 2000 and 2009, there were a total of 1,509 infants in Michigan hospitalized with a diagnosis of NWS\*.

\*NWS was identified using the ICD-9-CM diagnosis code 779.5

**Figure 2. Rate of Neonatal Withdrawal Syndrome among Michigan Infants by County, 2000-2009**



**Figure 1. Rate of Neonatal Withdrawal Syndrome by Year among Michigan Infants, 2000-2009**



- The rate of NWS among Michigan infants increased from 41.2 to 289.0 per 100,000 live births from 2000 to 2009, representing a 601% increase (Figure 1).
- Rates of NWS between 2000 and 2009 varied by county (Figure 2). The highest county rates were in northern portion of the Lower Peninsula and the Upper Peninsula.
- NWS infants have longer hospital stays, which cost over \$35 million between 2000 and 2009.<sup>3</sup>

References: 1. O'Donnell M, Nassar N, Leonard H, et al. Increasing prevalence of neonatal withdrawal syndrome: population study of maternal factors and child protection involvement. *Pediatrics*. Apr 2009;123(4):e614-621. 2. Wagner CL, Katikaneni LD, Cox TH, Ryan RM. The impact of prenatal drug exposure on the neonate. *Obstet Gynecol Clin North Am*. Mar 1998;25(1):169-194. 3. Hekman K et al. Neonatal withdrawal syndrome, Michigan, 2000-2009. *Am J Prev Med*. 2013; 45(1): 113-117.