

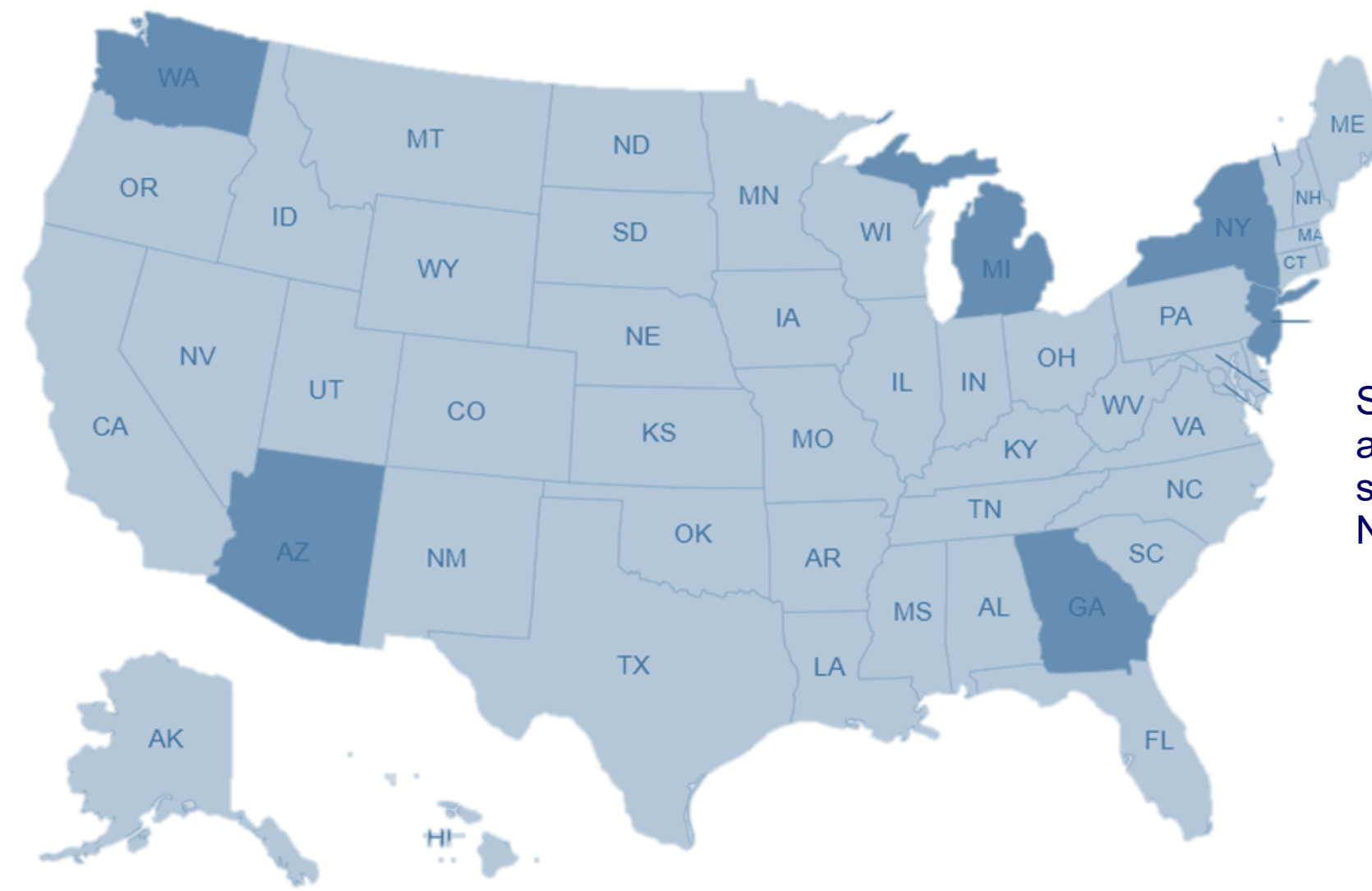
Surveillance for Emerging Threats to Mothers and Babies Network (SET-NET): Syphilis

Michigan, 2020-2021

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What is SET-NET?

SET-NET is a CDC-funded project aimed at understanding how emerging and reemerging health threats affect pregnant persons and their infants. Michigan's SET-NET project focused on syphilis in pregnant persons and their infants delivered from 2020-2021. Michigan utilized disease surveillance systems and vital records to identify persons with a syphilis diagnosis during their pregnancy. Medical record abstractions were conducted on each identified case utilizing medical records, vital records, investigation notes created by disease intervention specialists, and Medicaid billing records. An analysis of the data describes populations most affected by perinatal and congenital syphilis in Michigan and how care and treatment impact pregnant persons and their infants.



Six states, including Michigan, are currently participating in syphilis data collection for SET-NET (highlighted in the map).

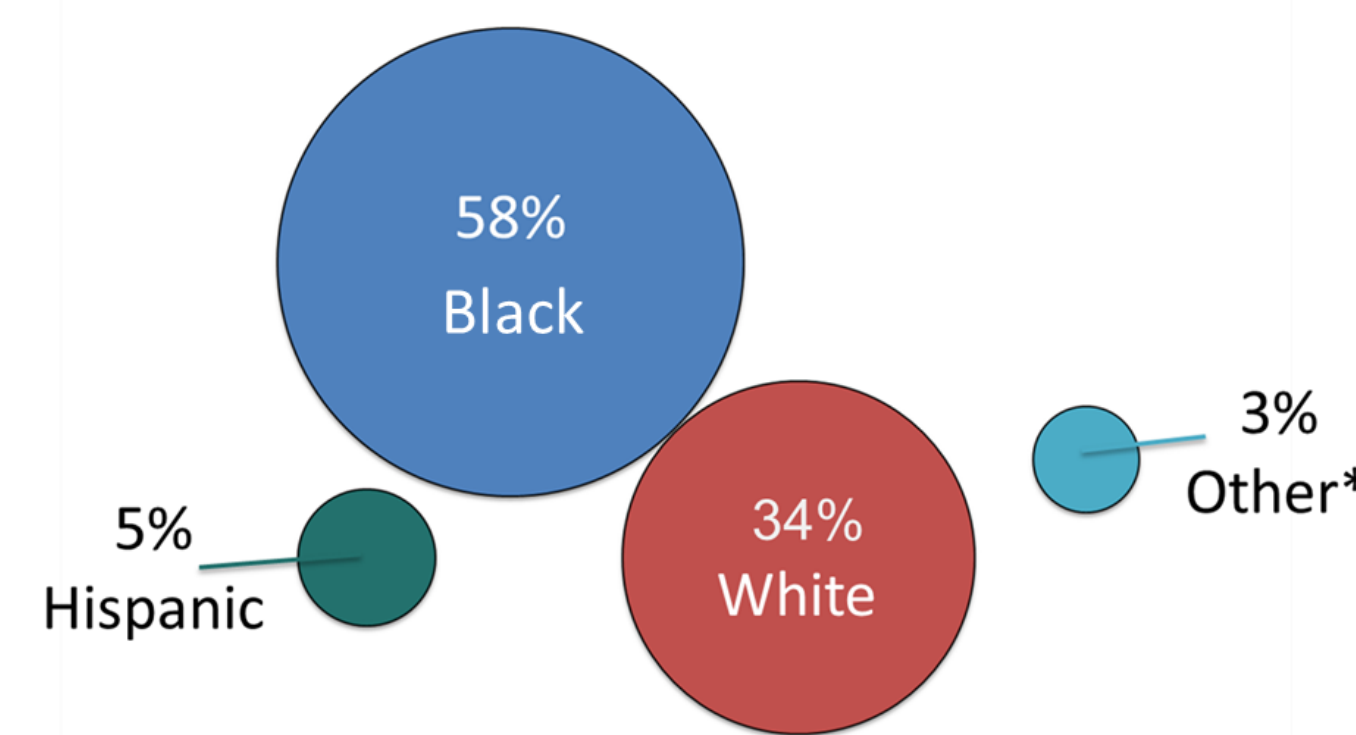
Demographics

Total Syphilis in Pregnant Persons from 2020-2021: N=207

- ◆ 2020: 87 cases
- ◆ 2021: 120 cases

Race & Ethnicity

Black pregnant persons account for **58%** of participants in this study yet are 14% of Michigan's general population. In contrast, white pregnant persons account for **34%** of participants yet are 74% of the general population.



*Other races include Asian, American Indian or Native American, and multiracial non-Hispanic.

Insurance Status

Among pregnant persons with syphilis, **80%** were enrolled in Medicaid at delivery. **Eighteen percent** had private insurance, and **1%** had no insurance. Insurance status can be a barrier to care.

Substance Use

Over half (**52%**) of pregnant persons with syphilis used substances during their pregnancy. Of these, **45%** used THC during their pregnancy, **16%** used opioids or other illicit drugs, and **13%** used alcohol.

Housing Status

Homelessness during pregnancy was reported by **13%** of study participants and incarceration within 12 months of delivery or pregnancy completion was reported by **5%**.

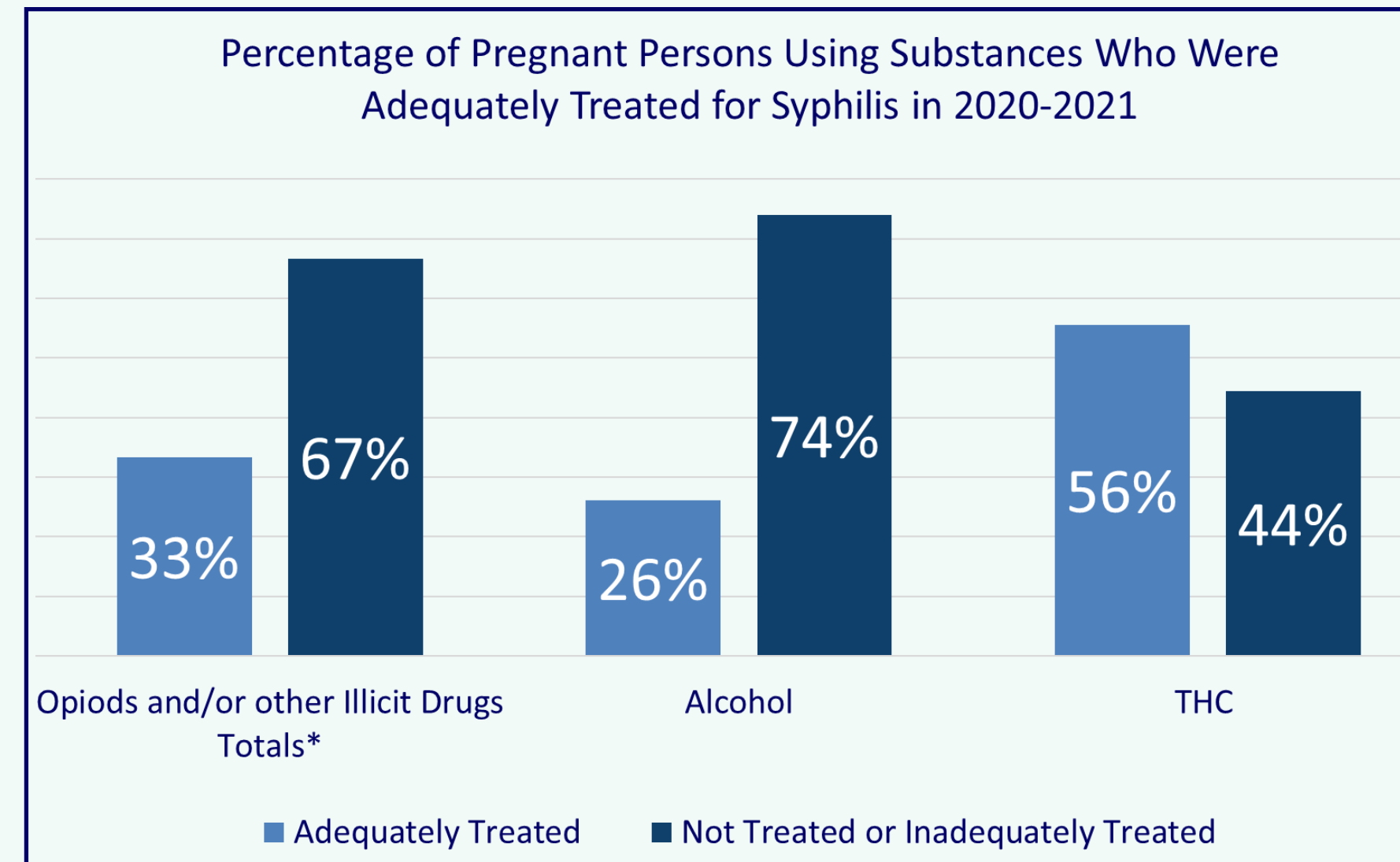
Syphilis Treatment

From 2020-2021, **66%** of cases were adequately treated during their pregnancy, while **33%** were not adequately treated. Penicillin G benzathine is the only recommended treatment for syphilis among pregnant persons. Treatment must begin at least 30 days prior to delivery either as a single dose or in three doses spaced seven to nine days apart, depending on the stage of syphilis.

This project explored how social determinants of health have impacted adequate treatment, focusing on pregnant persons that used substances during their pregnancy, experienced homelessness, and/or incarceration, and received varying prenatal care. It also explored how inadequate treatment leads to infants born with syphilis, known as congenital syphilis.

Treatment and Substance Use

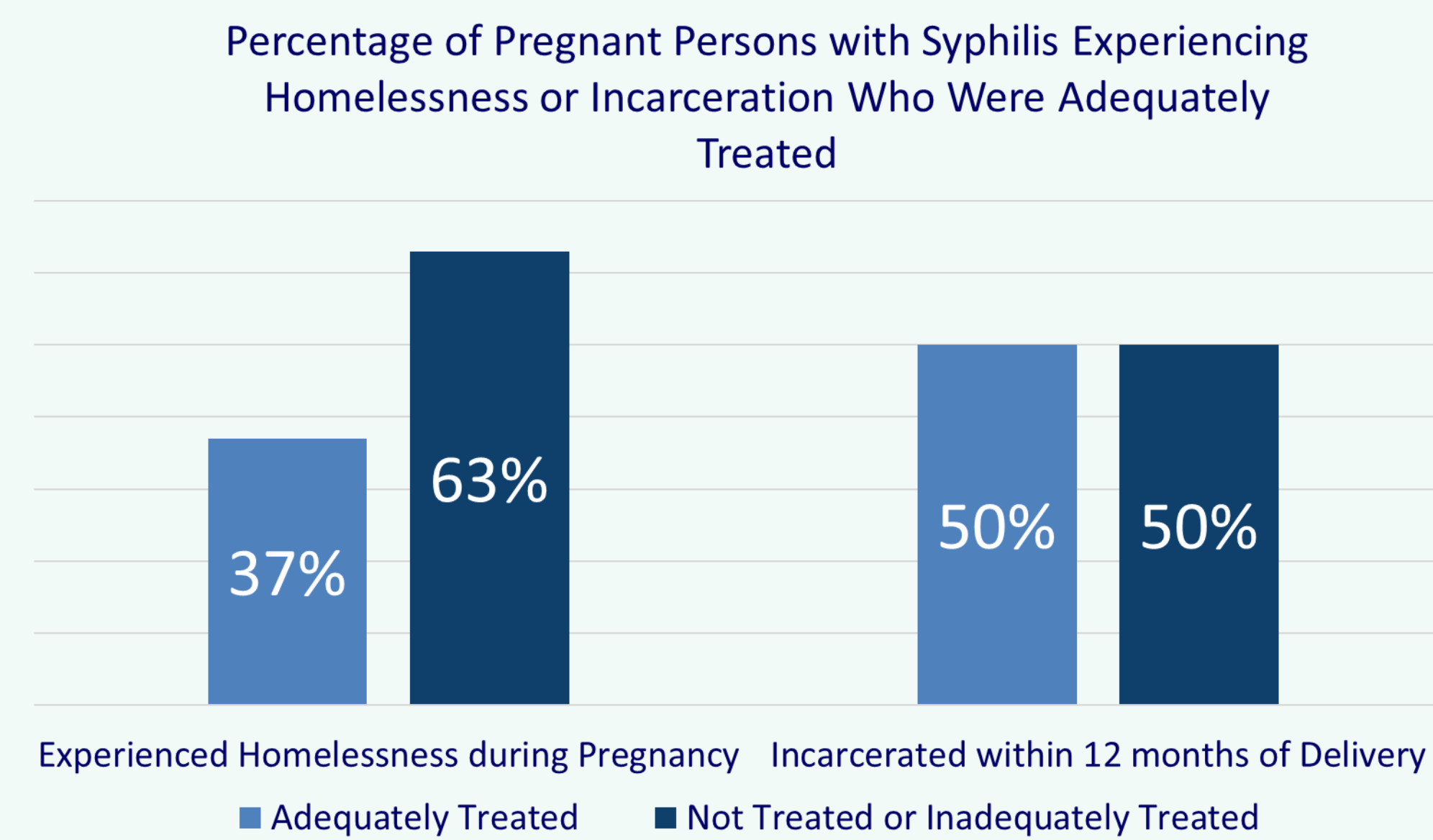
Of those who used any substances during pregnancy, almost half (**47%**), were adequately treated. This included approximately half (**56%**) of those using THC and one-third (**33%**) of those using opioids or other illicit drugs* receiving adequate treatment. Only one-fourth (**26%**) of alcohol users received adequate treatment, the lowest proportion among all substances used.



*Other Illicit Drugs: cocaine, methamphetamine, MDMA.

Treatment and Housing Status

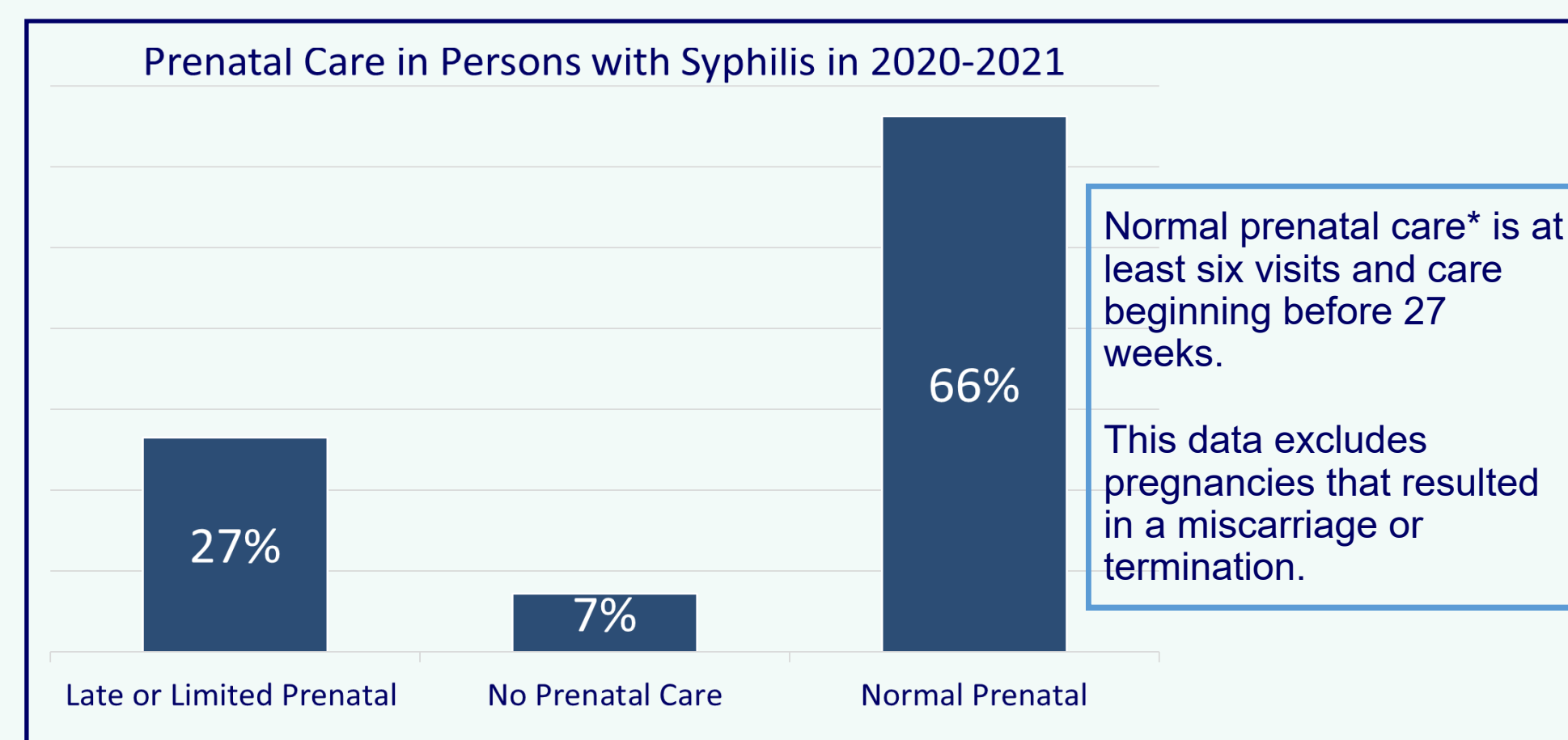
Among pregnant persons with syphilis who were experiencing homelessness, **37%** were adequately treated during their pregnancy.



Half of pregnant persons who were incarcerated within 12 months of delivery.

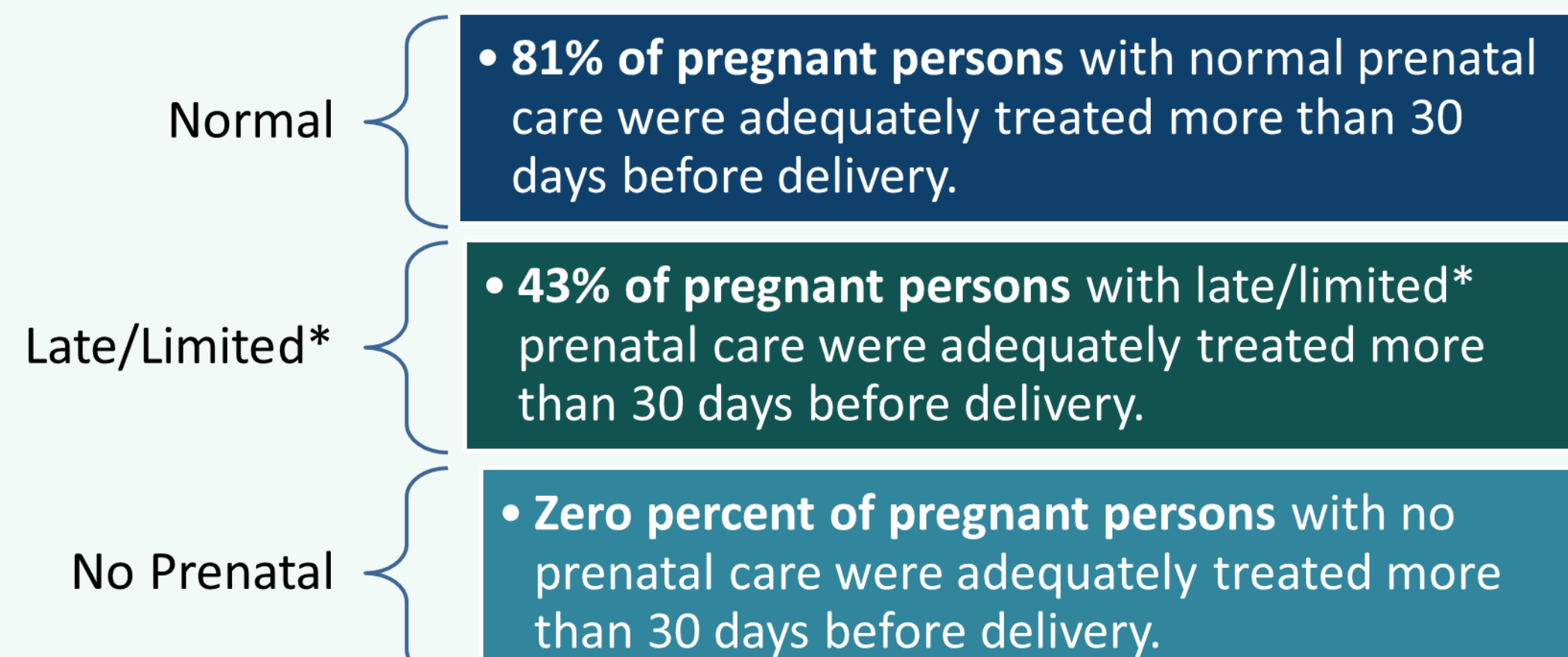
Prenatal Care

Michigan law requires that all pregnant persons be screened for syphilis at their initial prenatal visit and again during the third trimester. The study revealed that **66%** of pregnant persons had normal prenatal care*, making it easier for timely testing and treatment.



Prenatal Care and Treatment

Among pregnant persons who received normal prenatal care, **81%** were adequately treated. This is in comparison to less than half (**43%**) of pregnant persons with late/limited prenatal care and **zero percent** of pregnant persons with no prenatal care receiving adequate treatment.



* Late/limited prenatal care defined as five or less visits or starting after 27 weeks.

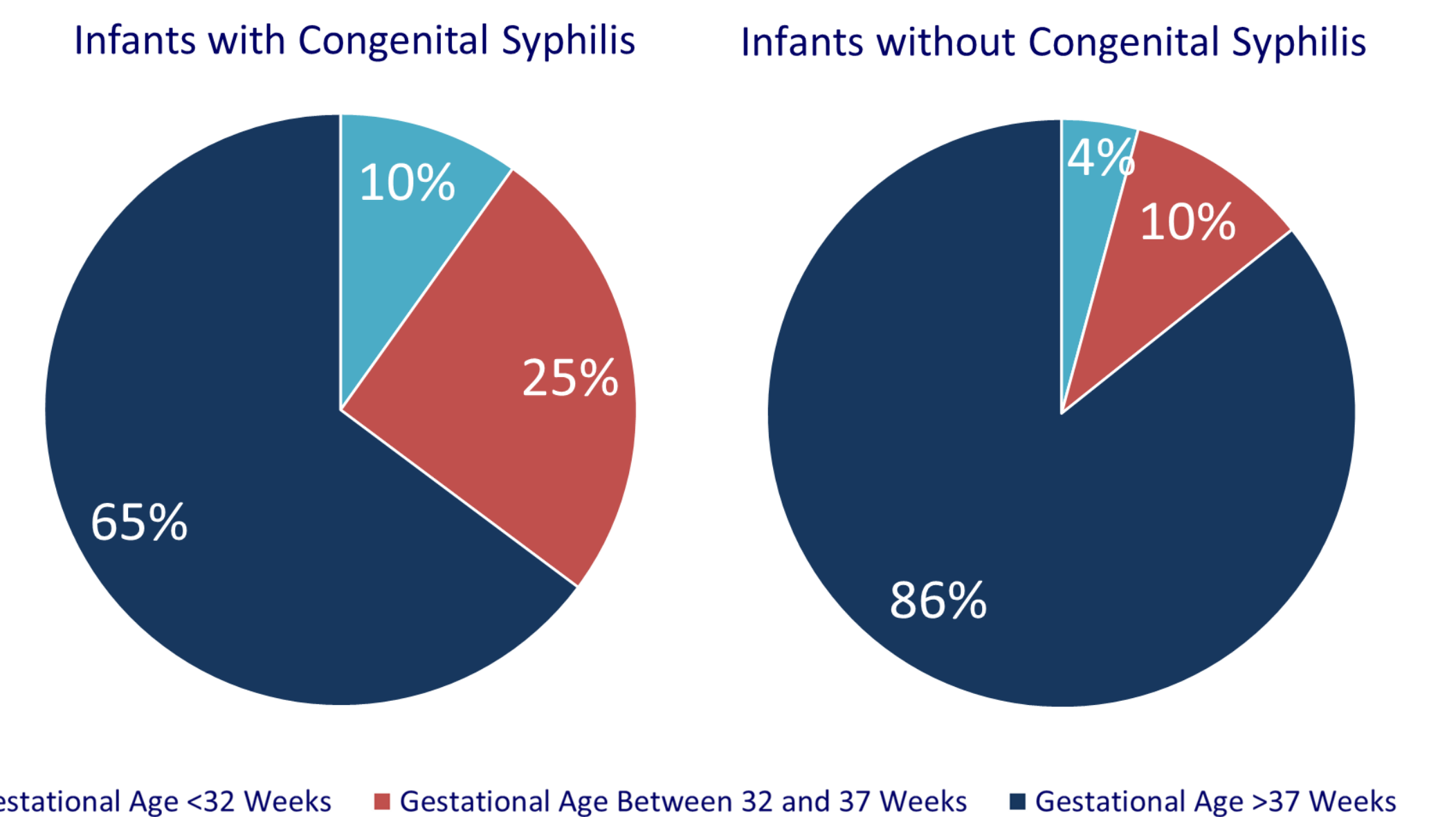
Congenital Syphilis

Adequate treatment during pregnancy is highly effective in preventing syphilis from being passed from pregnant person to infant. This is known as congenital syphilis (CS). CS can cause miscarriages, stillbirths, prematurity, low birth weight, birth defects, and infant death.

One-third (**33%**) of infants born to pregnant persons with syphilis were diagnosed with CS in Michigan during the years 2020-2021 — including two syphilitic stillbirths. It is crucial that infants born with CS, even if they are asymptomatic, are immediately treated with Penicillin G benzathine in a single dose or intravenously over a course of 10 days to prevent complications from CS.

Gestational Age

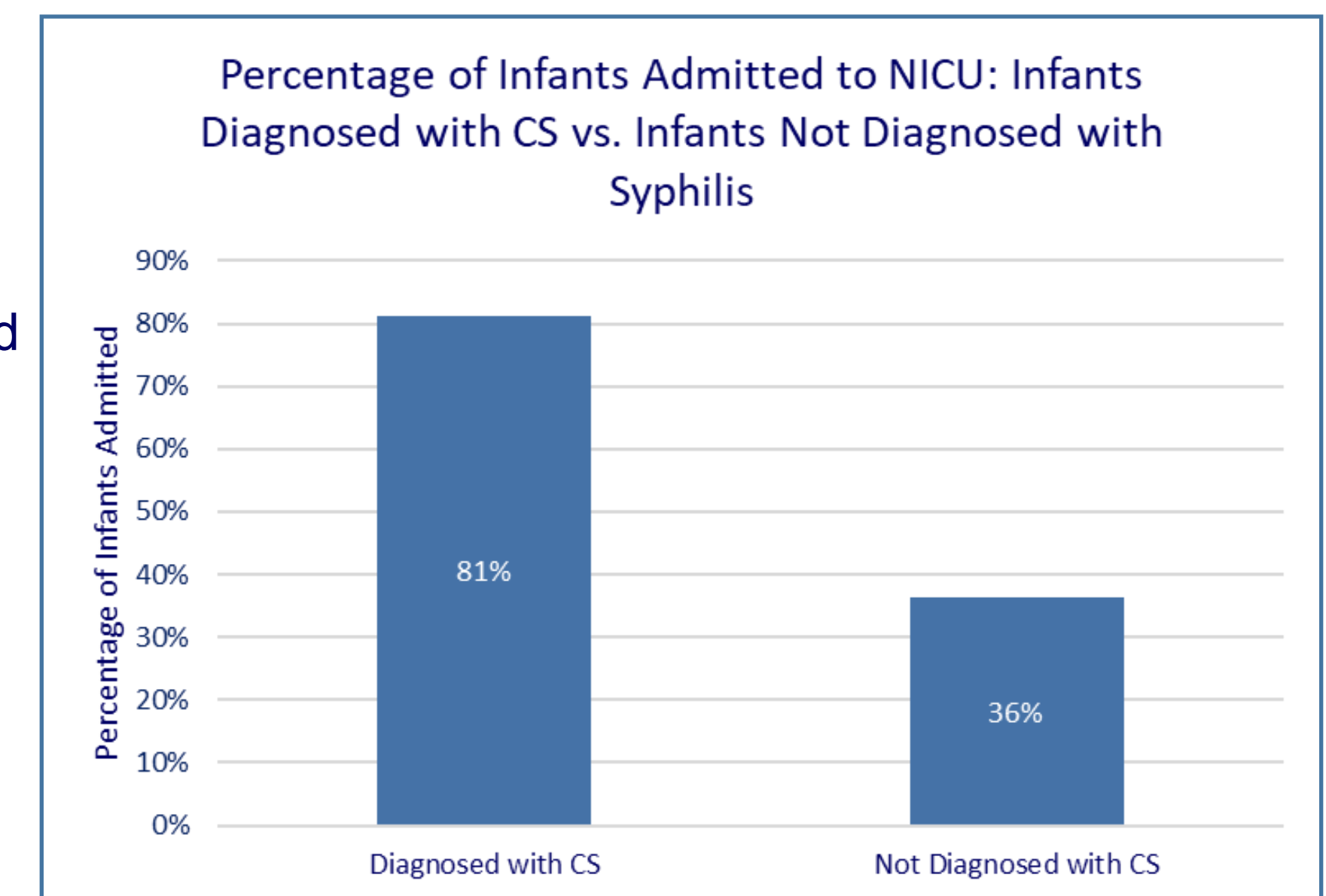
- ◆ Those born with CS were born prematurely more often than infants without CS.
- ◆ **35%** of infants with CS were born at less than 37 weeks compared to **14%** of infants without CS.



Hospitalizations

Infants born with CS may have severe health issues, often times requiring hospitalization. CS can cause birth defects such as severe anemia, enlarged liver and spleen, deformed bones, jaundice, brain and nerve problems, like blindness or deafness, meningitis, and skin rashes.

Infants with CS were hospitalized in the neonatal intensive care unit (NICU) more often than infants without CS. Infants with CS were also hospitalized for longer periods of time. Of the 188 infants born to pregnant persons with syphilis, 100 infants were admitted to the NICU. This includes **81%** of infants with CS and **36%** of infants without CS. The average length of NICU stay was 23 days for infants with CS versus 15 days for infants without CS.



Summary

Prompt diagnosis and treatment of syphilis in pregnant persons is crucial to reducing adverse syphilis-related outcomes for pregnant persons, their infants and the overall transmission of syphilis. The need for time-appropriate screening and adequate treatment should be addressed at any health care encounter during pregnancy.

To learn more about Michigan's SET-NET project and the efforts to reduce the impact of CS, please refer to the Provider FAQ (scan QR code below).

Acknowledgments

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