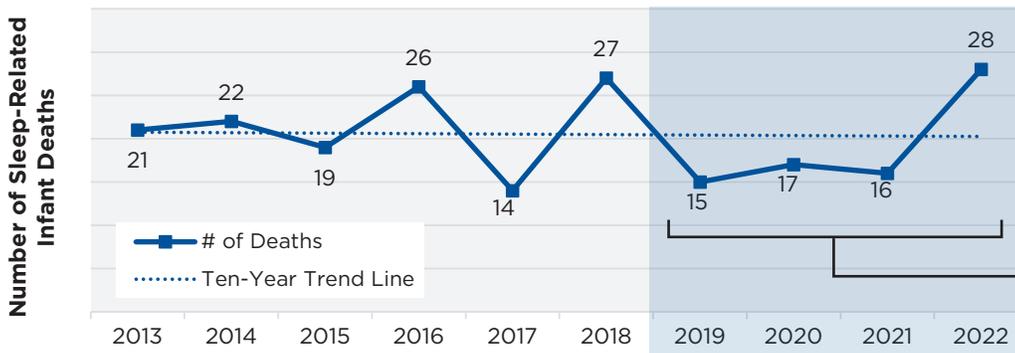FRANKLIN COUNTY • 2019-2022
SLEEP-RELATED INFANT DEATH REPORT

INTRODUCTION

From 2019 to 2022, there were **76 sleep-related infant deaths**. These deaths occur when infants, less than one year of age, die during sleep. Many of these deaths are preventable. These 76 deaths accounted for 14% of all infant deaths during this period.

Franklin County has averaged just over 20 sleep-related infant deaths per year over the last 10 years.

Number of Sleep-Related Infant Deaths

21 | 22 | 19 | 26 | 14 | 27 | 15 | 17 | 16 | 28

■— # of Deaths
···· Ten-Year Trend Line

2013 2014 2015 2016 2017 2018 2019 2020 2021 2022

This report focuses on sleep-related infant deaths from 2019 to 2022.

There are two main categories of sleep-related infant deaths:
- **Sudden Infant Death Syndrome (SIDS)** is defined as the sudden death of an infant that cannot be explained even after a full investigation that includes a complete autopsy, examination of the death scene, and review of the clinical history.[1]
- **Other sleep-related infant deaths, also referred to as Sudden Unexplained Infant Deaths (SUIDs),** is defined as the death of an infant younger than 1 year of age that occurs suddenly and unexpectedly. Subgroups of SUID include accidental suffocation in bed, entrapment, overlay and undetermined.[2]

By identifying caregiver and infant demographic patterns and risk factors in sleep-related infant deaths, we are not placing blame on the caregivers of the infants. Instead, the goal is to recognize that there are many opportunities for communities to support and improve the lives of pregnant women, infants and their families in order to decrease preventable, sleep-related infant deaths in the future.

Source: *Data for this report come from the Franklin County Child Fatality Review (CFR), an ongoing community planning process in which a team of community experts from various systems and agencies convenes to review the circumstances around the deaths of infants and children residing in Franklin County, Ohio. These data are collected from death scene investigations, medical records, vital statistics records and records from participating agencies.*

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1   *In Franklin County, SIDS has become rare as a cause of infant death. This reflects a shift in the classification of sudden infant deaths by coro-ners/pathologists, as well as advancements in death scene investigations.*
2   *"Common SIDS and SUID Terms and Definitions." http://safetosleep.nichd.nih.gov/safesleepbasics/SIDS/Common. Accessed 30 Oct. 2019.*

CAREGIVER DEMOGRAPHICS

AGE & EDUCATION

From 2019 to 2022, 87% of mothers who had a sleep-related infant death were ages 20-39 years, and 73% had a high school degree or higher level of education.

Mothers of infants who suffered from a sleep-related infant death were less likely than **other mothers** to have at least a high school degree. (Franklin County, 2019-2022)

Percent of Mothers with a High School Degree or Higher

Sleep-Related Infant Deaths

All Births in Franklin County

70%   75%   80%   85%   90%
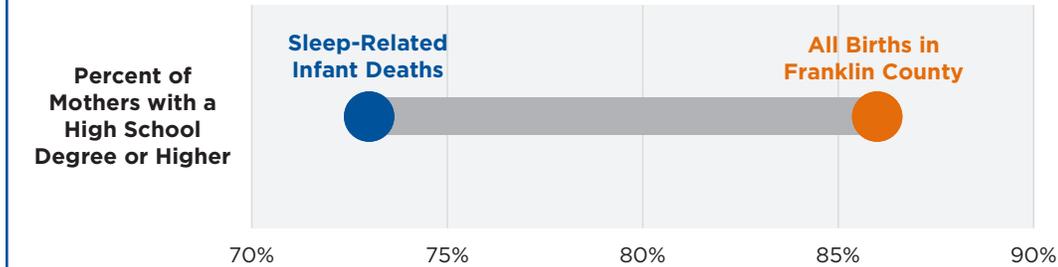
FIRST GENERATION IMMIGRANTS

From 2019 to 2022, 12% of infants who suffered from a sleep-related death had parents who are first-generation immigrants. In comparison, 27% of all births in Franklin County are to foreign-born mothers.[3]

SUPERVISION AT TIME OF DEATH

18% of sleep-related infants deaths occurred while someone other than a parent was supervising the infant. Five percent were being supervised by a grandparent and thirteen percent by someone else.

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3   *Ohio Department of Health Vital Statistics, analyzed by Columbus Public Health Office of Epidemiology.*

CAREGIVER RISK FACTORS
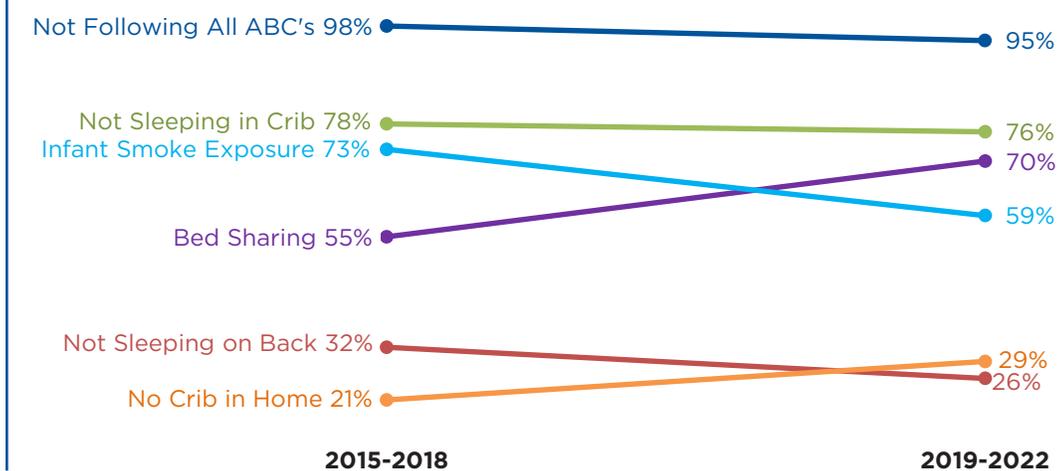
UNSAFE SLEEP ENVIRONMENT

The American Academy of Pediatrics' (AAP) guidelines for creating a safe sleep environment for infants state that babies less than 1 year old should sleep Alone, on their Backs and in an empty, safety-approved Crib (ABCs of Safe Sleep).[4] Babies can share a room with parents, but never the same sleep surface. Infants should never be placed to sleep on adult beds, couches, chairs or air mattresses.

Other best practices include:
- Avoiding smoke exposure, as well as alcohol and illicit drug use during pregnancy and after birth.
- Keeping potential suffocation hazards, such as blankets, pillows, soft toys or bumper pads, out of the sleep area. Infants' cribs should be completely empty except for a tight-fitted sheet.
- Breastfeeding or feeding expressed milk.

It is important for caregivers to follow all of the ABCs of Safe Sleep -- not just one or two -- to ensure infants are as safe as possible while sleeping.

Similar to the prior four year period, most sleep-related infant deaths in 2019-2022 in Franklin County were not following all safe sleep recommendations.

	2015-2018	2019-2022
Not Following All ABC's	98%	95%
Not Sleeping in Crib	78%	76%
Infant Smoke Exposure	73%	59%
Bed Sharing	55%	70%
Not Sleeping on Back	32%	26%
No Crib in Home	21%	29%

In 2019-2022:
- Most caregivers had a **crib in their home**, yet the **infant wasn't sleeping in it**.
- The majority of **infants were placed on their back** to sleep when they died.
- Over half of infants were **exposed to prenatal or environmental smoke** and seventy percent were **sharing a sleep surface** when they died.
- Very few infants (n=4) were following all of the **ABCs of Safe Sleep** when they died.

SMOKING, SUBSTANCE USE AND IMPAIRMENT

Smoking Status: Seven percent of births in Franklin County in 2019 to 2022 were to mothers who smoked cigarettes during pregnancy, yet among sleep-related infant deaths, 42% of infants' mothers smoked cigarettes during pregnancy.

Prenatal smoking is linked to preterm birth and low birthweight and is a major risk factor for sudden unexpected infant death. Studies show that a substantial amount of sleep-related infant deaths could be prevented by eliminating all prenatal smoke exposure.[5]
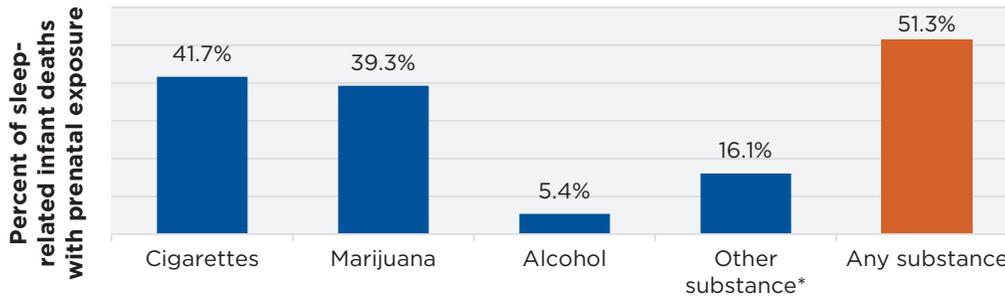
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4   *Rachel Y. Moon, Rebecca F. Carlin, Ivan Hand, The Task Force on Sudden Infant Death Syndrome and the Committee on Fetus and Newborn; Sleep-Related Infant Deaths: Updated 2022 Recommendations for Reducing Infant Deaths in the Sleep Environment. Pediatrics July 2022; 150 (1): e2022057990. 10.1542/peds.2022-057990.*
5   *Anderson, Tatiana M., et al. "Maternal Smoking Before and During Pregnancy and the Risk of Sudden Unexpected Infant Death." Pediatrics, vol. 143, no. 4, Apr. 2019, p. e20183325. pediatrics.aappublications.org, doi:10.1542/peds.2018-3325*

CAREGIVER RISK FACTORS, *CONTINUED*

Substance Use: In recent years in the U.S., marijuana use during pregnancy has increased as the perception of risk has decreased.[6] Approximately 8% of pregnant women aged 15 to 44 reported marijuana use in the past month.[7] Among sleep-related infant deaths in Franklin County, 39% of mothers used marijuana prenatally. A smaller proportion of mothers of sleep-related infant deaths reported using other substances (including alcohol, cocaine and/or opiates) while pregnant.

Among sleep-related infant deaths, more than 50% of mothers used one or more substances while pregnant. (Franklin County, 2019-2022)

Percent of sleep-related infant deaths with prenatal exposure

- Cigarettes: 41.7%
- Marijuana: 39.3%
- Alcohol: 5.4%
- Other substance*: 16.1%
- Any substance: 51.3%

Includes cocaine, opiates, meds to treat drug addiction, heroin, fentanyl, and benzodiazepine; tobacco, marijuana, and alcohol use reported separately

Impairment: 16% of caregivers were impaired by a substance at the time of the infant's sleep-related death.

CAREGIVER PROTECTIVE FACTORS

BREASTFEEDING

Breastfeeding is proven to be beneficial for moms as well as babies. It can boost an infant's immune system and reduce the risk of SIDS.

57% of infants who suffered from a sleep-related infant death had been breastfed for at least a short period of time; however, the data do not indicate breastfeeding exclusivity or duration. This percent has gone down slightly from 68% in 2015-2018.

HOME VISITING

Home visitors can help reduce infant mortality by providing education and support to women and families, including conducting health assessments, providing counseling, and referring families to social service programs.

15% of families with a sleep-related infant death received home visiting services at some point during their pregnancy and/or after the baby's birth.[8]

PRENATAL CARE

Nearly all mothers (96%) received at least some prenatal care. However, 33% received inadequate prenatal care, defined as care that either started after the fourth month of pregnancy or included far fewer than the recommended number of visits.[9]

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6   *"Marijuana and Pregnancy". Substance Abuse and Mental Health Services Administration. Accessed December 6, 2023. https://www.samhsa. gov/marijuana/marijuana-pregnancy.*

7   *"2022 NSDUH Detailed Tables". Substance Abuse and Mental Health Services Administration. Accessed January 25, 2024. https://www. samhsa.gov/data/report/2022-nsduh-detailed-tables*
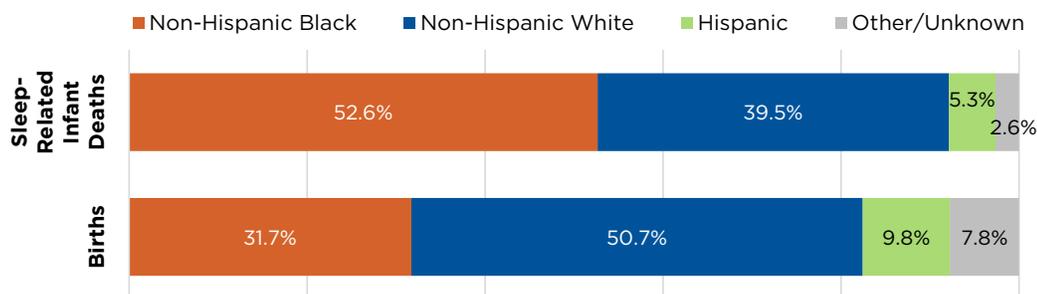
8   *Home visiting here is defined as receiving at least one home visit from a home visiting program for pregnant or parenting families.*

9   *Kotelchuck M. An evaluation of the Kessner Adequacy of Prenatal Care Index and a proposed Adequacy of Prenatal Care Utilization Index. Am J Public Health. 1994 Sep;84(9):1414-20. doi: 10.2105/ajph.84.9.1414.*

BABY DEMOGRAPHICS

RACE & ETHNICITY

Infants born to Non-Hispanic Black mothers accounted for fifty-three percent of sleep-related infant deaths but only thirty-two percent of births. (Franklin County, 2019-2022)

Legend: ■ Non-Hispanic Black ■ Non-Hispanic White ■ Hispanic ■ Other/Unknown

	Non-Hispanic Black	Non-Hispanic White	Hispanic	Other/Unknown
Sleep-Related Infant Deaths	52.6%	39.5%	5.3%	2.6%
Births	31.7%	50.7%	9.8%	7.8%

From 2019 to 2022, non-Hispanic Black infants died from sleep-related infant deaths at a rate three times higher than non-Hispanic White infants. This disparity has been consistently high over time.

The racial disparity in the infant mortality rate and sleep deaths in particular between Black babies and white babies illustrates the need to address the social determinants of health and improve equity across racial and ethnic groups so all babies can live to their first birthday and beyond.

SEX

Sixty-one percent of sleep-related infant deaths were male.

GESTATIONAL AGE

Most sleep-related infant deaths were among infants who were born full term. (Franklin County, 2019-2022)

Very Preterm (<32 weeks)
7%

Preterm (32-36 weeks)
16%

Full-term (37+ weeks)
77%
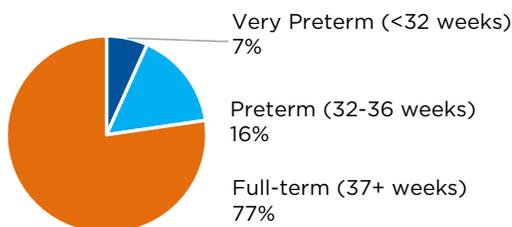
Twenty-three percent were preterm (less than 37 weeks gestation), including 7% born very preterm (less than 32 weeks gestation). During the same time period 11% of Franklin County births were preterm. Babies who are born early have a higher sleep-related infant death rate.[10]

HEALTH INSURANCE

Mothers of infants who suffered a sleep-related infant death were less likely to be Medicaid recipients in 2019-2022 compared to the prior four years.[11] (Franklin County)

Percent of Mothers on Medicaid	
91%	71%
2015-2018	2019-2022

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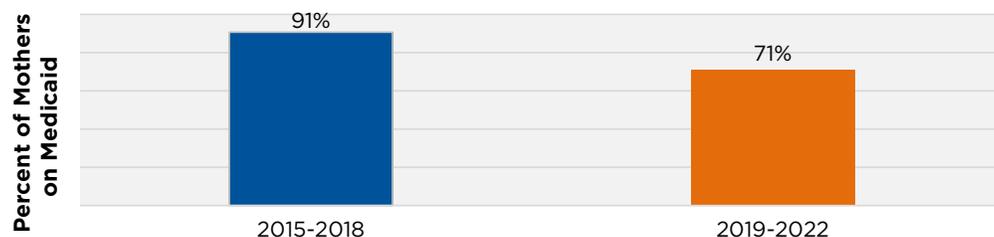
10 Barbara M. Ostfeld, Ofira Schwartz-Soicher, Nancy E. Reichman, Julien O. Teitler, Thomas Hegyi; Prematurity and Sudden Unexpected Infant Deaths in the United States. Pediatrics July 2017; 140 (1): e20163334. 10.1542/peds.2016-3334

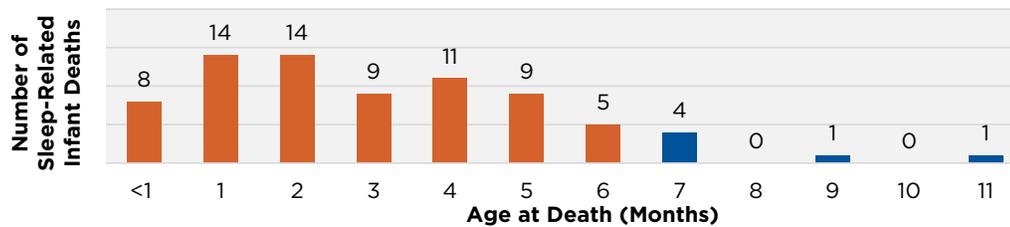11 From 2020-2022 overall Medicaid enrollment in Ohio increased.

BABY RISK FACTORS

SECONDHAND SMOKE

Almost half (48%) of all sleep-related infant deaths had been exposed to secondhand smoke. For comparison, an estimated 40% of children ages 3 to 11 in the United States were exposed to secondhand smoke during 2017-2018.[12] Secondhand smoke exposure can lead to many health problems, including sudden unexpected infant death.
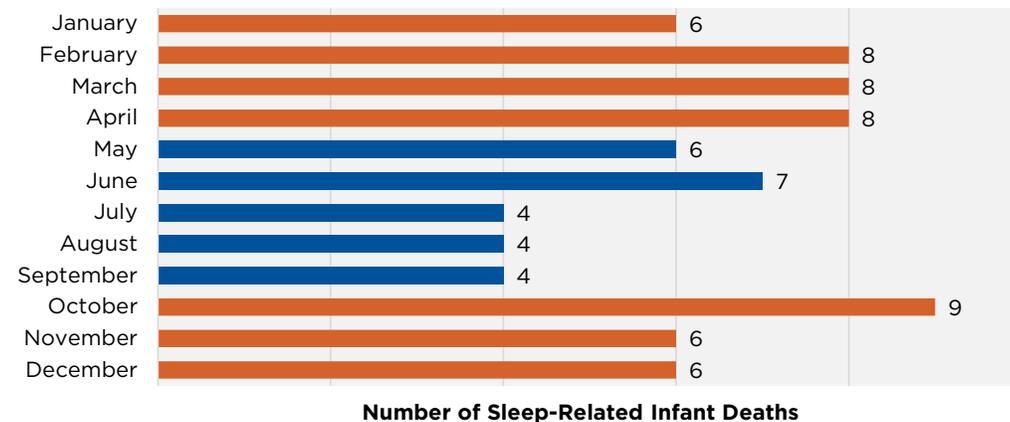
AGE AT DEATH

Ninety-two percent of sleep-related infant deaths were among infants who were 6 months old or younger. (Franklin County, 2019-2022)

Number of Sleep-Related Infant Deaths by Age at Death (Months):

Age at Death (Months)	<1	1	2	3	4	5	6	7	8	9	10	11
Number of Sleep-Related Infant Deaths	8	14	14	9	11	9	5	4	0	1	0	1

MONTH OF DEATH

During cold weather there were more sleep-related infant deaths.[13] (Franklin County, 2019-2022)

Month	Number of Sleep-Related Infant Deaths
January	6
February	8
March	8
April	8
May	6
June	7
July	4
August	4
September	4
October	9
November	6
December	6

Number of Sleep-Related Infant Deaths

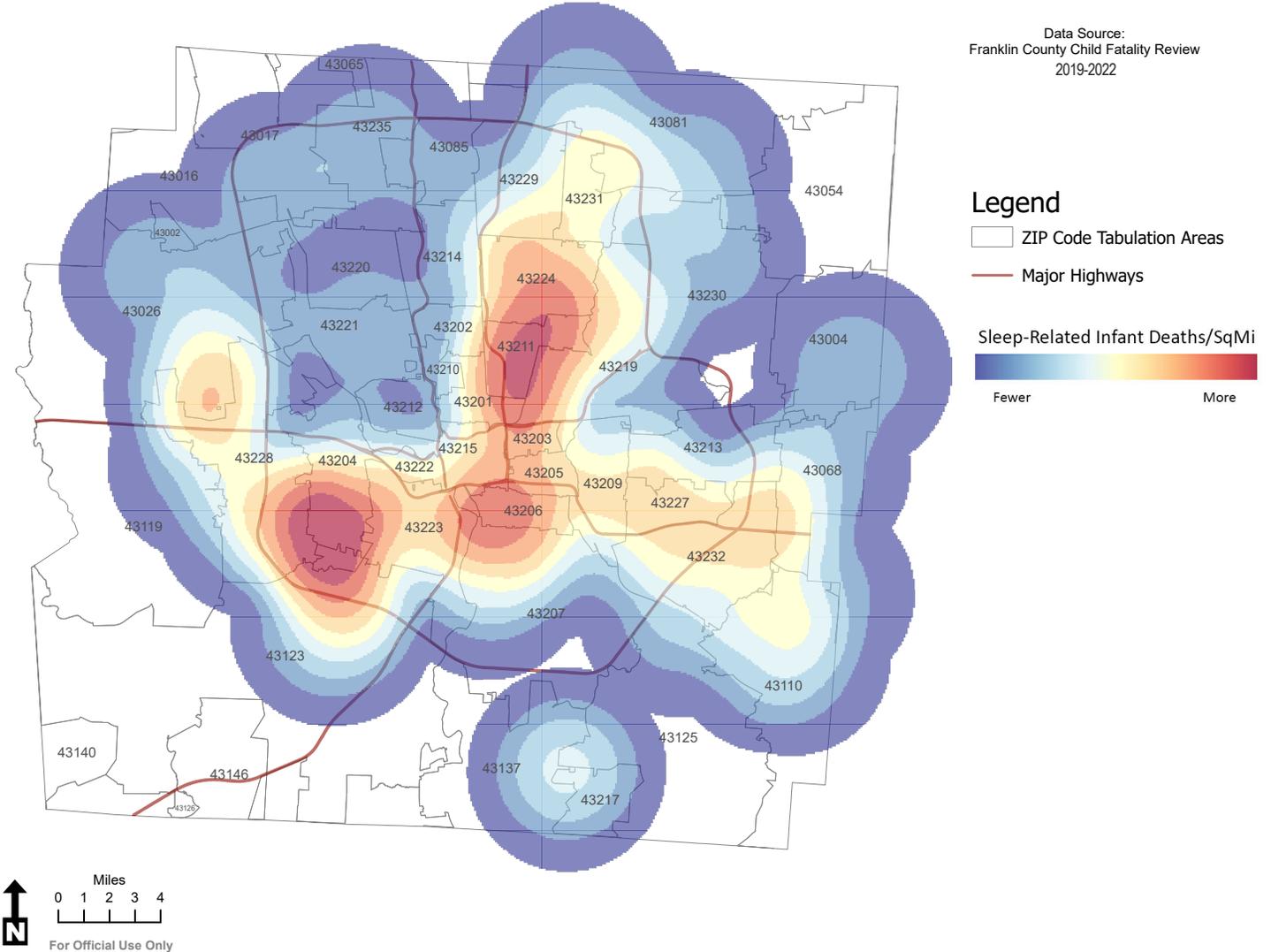
12 "Trends and disparities in secondhand smoke". Prevention. Centers for Disease Control and Prevention. Accessed December 6, 2023. https://www.cdc.gov/tobacco/secondhand-smoke/disparities.html

13 "In cold weather, parents and caregivers often place extra blankets or clothes on infants, to keep them warm. But over bundling may cause infants to overheat, increasing their risk for SIDS, according to the National Institutes of Health." https://www.nih.gov/news-events/news-releases/nih-alerts-caregivers-increase-sids-risk-during-cold-weather

WHERE THEY LIVED

Some areas in Franklin County have more sleep-related infant deaths than others.[14] However, nearly the whole county is within five miles of a residence where a sleep-related infant death occurred.

Data Source:
Franklin County Child Fatality Review
2019-2022

Legend
☐ ZIP Code Tabulation Areas
— Major Highways

Sleep-Related Infant Deaths/SqMi

Fewer   More

Miles
0 1 2 3 4

N

For Official Use Only

Over half of the sleep-related infant deaths in 2019-2022 occurred among residents of a CelebrateOne priority area ZIP code (39 of 76 deaths).[15] For comparison, about one third of Franklin County births are in CelebrateOne ZIP codes. CelebrateOne priority areas are neighborhoods in Columbus where higher unemployment, lower graduation rates, unstable housing, lack of access to nutritious food, higher instances of crime, and lower access to health coverage and timely prenatal care contribute to poor outcomes for infants.

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14 *Addresses mapped are where the infants resided, not necessarily where the death occurred.*
15 *CelebrateOne priority ZIP codes are 43203, 43204, 43205, 43206, 43207, 43211, 43219, 43222, 43223, 43224, 43227, 43229, 43232*

RECOMMENDATIONS

ABCS OF SAFE SLEEP

- Promote culturally appropriate safe sleep recommendations with messaging that includes:
  - Safe Sleep, Sober Caregiver
  - Share the room, not the bed
  - Separate sleep surfaces for each infant at all times
- Mandate Safe Sleep Ambassador trainings for any professionals who work with families with infants such as nurses, home visitors, care coordinators, day care workers, etc.
- Maintain an ongoing pack 'n play distribution program.
- Provide safe sleep education for fathers.
- Educate caretakers about surfaces that are unsafe for sleep or items that have been recalled:
  - Communicate with caregivers that air mattresses are included on the list of unsafe surfaces.
  - Continue awareness on not using rock 'n plays or similar recalled items.
  - Host trade-in events where people can drop off their recalled or unsafe baby sleep products and receive a gift card.

What we have done:
- Columbus Public Health (CPH) and CelebrateOne trained 4,042 Safe Sleep Ambassadors and Allies from 2019-2022.
- CPH and over 40 partner agencies distributed 7,033 portable cribs through the Cribs for Kids program.
- CPH worked with a contractor to develop a social media campaign and a video addressing the ABCs of Safe Sleep. The video is viewed by all persons receiving portable cribs through the Cribs for Kids program in Franklin County.
- Franklin County Children Services (FCCS) provides pack 'n plays and safe sleep onesies to families, as well as education cards on the ABCs of safe sleep. FCCS has been a part of news segments promoting infant safe sleep over the past several years.
- Nationwide Children's Hospital (NCH) has extensive infant safe sleep programming, including: screening for safe sleep at all well child and most sick visits in the Primary Care offices from birth to age 1, and providing pack 'n plays when needed; conducting hospital audits for safe sleep in the NICU/ICU; remaking the Franklin County safe sleep video for birthing hospitals; and providing patient education about safe sleep, including a video, during all newborn visits. NCH also re-convened the Safe Sleep Consortium, an internal team championing the hospital's safe sleep work, and they conduct chart reviews and meet to discuss unsafe sleep-related deaths every other month.
- PrimaryOne Health provides education at every OB Intake Nurse appointment and at each trimester. Patients are assessed for need of pack 'n play at 32 weeks. Safe sleep assessments are integrated into all home visits, postpartum appointments and as needed during newborn/pediatric appointments.

HOUSING

- Increase affordable & safe housing opportunities for pregnant women and families.
- Link pregnant women and moms with infants to home visiting through homeless shelters.

What we have done:
- The Department of Development, Housing Division (DOD) worked to prioritize the lowest cost housing for those who are homeless, including families. Additionally, DOD is asking developers to consider providing housing to pregnant women.
- CelebrateOne Connectors and Navigators screened clients for housing stability and referred them to services as needed. CelebrateOne also worked to prioritize housing for pregnant and parenting families through the launch of the Housing for Pregnant Women program, which provided pregnant women experiencing housing instability with alternative solutions to staying in shelters or living on the land.

SUBSTANCE USE

- Educate on the dangers of co-sleeping with an impaired adult or an adult who smokes.
- Offer smoking cessation programs for mothers during pregnancy and post-partum, and for any adult that will be around the baby.
- Provide awareness around incidental drug exposure.
- Communicate the importance of ensuring there is always a sober adult to supervise the child.
- Provide better support and care for families who are dealing with substance use issues and providing care for the children.
- Use legal marijuana tax revenue money for education on prenatal marijuana use.

What we have done:
- CelebrateOne Connectors and Navigators screened clients for a history of trauma, tobacco and/or substance use and mental health concerns, and referred them to treatment as needed. CelebrateOne also prioritized hiring culturally diverse staff to encourage client comfort and cultural sensitivity, particularly in Somali, Ethiopian and Hispanic communities.
- CPH implements the Baby & Me Tobacco Free Program, linking pregnant people to smoking cessation services and incentives.
- The Tobacco team at CPH provided smoking cessation education and presentation materials directed towards dads in the Father 2 Father's group at the Columbus Urban League. Media advertisements addressing cessation programs for pregnant women also were used.

HOME VISITING

- Encourage participation for all high risk moms.
  - Women who test positive or endorse drug use at any time during their pregnancy
  - Women who report housing instability during or after pregnancy
- Explore loss of referrals for home visiting.

What we have done:
- Since 2020, Franklin County Public Health has implemented a public health nurse led Home Visiting program, in partnership with Heart of Ohio, with funding from the Franklin County Board of Commissioners. This home visiting program provides client-centered, flexible care coordination, education and support to prenatal and postpartum individuals along with their infants until the infant(s) turns 3 years old. Through this program, Black, African American and other minority individuals and their families are served by a team of public health nurses and community health workers.
- CPH developed phrasing for providers to use with patients to introduce home visiting into discussions of care plans. This phrasing also helped reframe home visiting in patients' minds, encouraging more patients to enroll in home visiting services. Providers were also educated on the different programs available for home visiting so they could make patient-specific referrals for related resources.

NEONATAL/PEDIATRICS

- Ensure there is medical continuity for the baby, especially for a medically complex infant.
- Ensure there is primary care follow-up after emergency department and urgent care visits.
- Provide physician-led education on which sleeping surfaces are safe and which are not.

RECOMMENDATIONS, *CONTINUED*

PRENATAL CARE & WOMEN'S HEALTH

- Reinforcing safe sleep messaging at all doctors' visits and wellness checks.
- Ensure there is primary care follow-up after emergency department and urgent care visits.
- Create bridges between prenatal care and drug treatment programs.
- Expand and improve domestic violence screenings during well visits and prenatal care visits.
- Improve access to on-site interpreters during prenatal care visits and during delivery.
- Connect mothers with wrap around services and home visiting before their discharge from the hospital.
- Provide domestic violence and human trafficking wrap around services to promote healthier coping skills.

What we have done:
- Columbus City Schools has a 30-year partnership with the OhioHealth PRIM - Pregnancy Mobile Unit serving students in four high schools. Safe sleep and parenting are part of student parental education.