MICHIGAN REPRODUCTIVE AND BIRTH OUTCOMES

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Abstract

This dataset contains the information used to calculate the nationally consistent data and measures for reproductive and birth outcomes in the State of Michigan for use on the Michigan Environmental Public Health Tracking data portal.

This dataset contains the following metrics for Reproductive and Birth Outcomes (RBO):

- Average annual number of very preterm (less than 32 weeks gestation) live singleton (one infant; does not include multiple births such as twins or triplets) births over a 5-year period.
- Average annual percent of very preterm live singleton births over a 5-year period.
- Number of preterm (less than 37 weeks gestation; includes very preterm births) live singleton births.
- Percent of preterm live singleton births.
- Perinatal (greater than or equal to 28 weeks of gestation and less than 7 days of age) mortality rate per 1,000 live births plus fetal deaths at 28+ weeks gestation.
- Neonatal (less than 28 days of age) mortality rate per 1,000 live births.
- Postneonatal (from 28 days of age to less than 1 year of age) mortality rate per 1,000 live births.
- Infant mortality rate per 1,000 live births (Infant deaths include perinatal death, neonatal death, and postneonatal death).
- Average annual number of very low birthweight (less than 1500 grams) live singleton births over a 5-year period.
- Average annual percent of very low birthweight live singleton births over a 5-year period.
- Number of low birthweight (LBW) (less than 2500 grams; includes very low birthweight births) live term singleton births.
- Percent of LBW live term singleton births.
- Sex Ratio (males to females) at birth among term singleton births only.
- Total fertility rate per 1,000 women of reproductive age (defined as ages 15-44).

Data from the Michigan Division for Vital Records and Health Statistics (DVRHS) were used to create this dataset through a Data Sharing Agreement.

All users are recommended to read and fully comprehend the metadata prior to data use. To access these data, please visit the MiTracking data portal.

Purpose

More than 100,000 babies are born every year in Michigan. Most women have a normal pregnancy and a healthy baby. But poor reproductive and birth outcomes can affect an infant's health and survival and cause emotional and financial stress on families.

This dataset was created to learn how often reproductive and birth outcomes occur for various groups of people. These data are intended to provide public health professionals, researchers, Tracking

grantees, and the general public with summary information on reproductive and birth outcomes for State of Michigan residents.

Supplemental Information

Limitations of the data:

- Gestational age (to measure weeks in the womb) may be uncertain for some births because of an unreported clinician's estimate of age.
- Cases or rates of preterm births may change over time for many reasons. For example, a new and better technique may be developed to detect the correct gestational age. Because of this technique, more cases will be identified as a preterm birth compared to those identified using the old technique, but this would not mean that there are more cases of preterm births.
- Cases or rates may change over time or be different for geographic areas for many reasons. Behaviors, medical history, and other personal characteristics such as access to medical care and stress can impact the likelihood of delivering a baby preterm. The data do not include any of these other factors.
- An increase in preterm births may represent improvements in fetal health. Conditions that may have resulted in fetal death decades ago might today result in fetal survival and a preterm infant.
- Cases or rates of LBW infants may change over time for many reasons. For example, increases in the multiple birth rate, obstetric interventions (e.g., induction of labor and caesarean delivery [C-Section]), older mothers, and greater use of infertility therapies ["In-vitro"] have likely influenced higher numbers of LBW infants over time.
- Infant mortality rates may change over time for many reasons, including genetics, birth defects, LBW, pre- and post-natal care, access to health care, sudden infant death syndrome (SIDS), injury prevention, and maternal pregnancy complications.
- The fertility rate is influenced by social and demographic choices for reproduction, maternal age, parity, and social class measures, as well as the use of contraception and infertility treatments leading to multiple births. These factors all may determine variations in overall fertility across populations and geographic locations; therefore, social and demographic factors would need to be controlled to examine any environmental effects on total fertility. They are not accounted for in these data.
- The maternal residence during pregnancy and the infant's residence during the first year of life may differ from maternal residence at birth or infant residence at death. The mother may have lived far from the place at which she gave birth during part or all of the pregnancy. The infant who died may have been born and lived for a major portion of its life far from the place of death; it may be less likely that neonates and perinates who died were born and lived far from the place of death.
- Various factors can affect the expression of sex. Decreases in male births are inversely related to parental smoking, gestation length, parental age, and birth order. Reproductive practices and social morays regarding sex preferences—males over females, for example - can affect the observed sex ratio. People's exposure to endocrine-disrupting chemicals may also contribute to changes in the observed sex ratio. Endocrine-disrupting chemicals are those that may interfere

with the body's endocrine system and contribute to a variety of changes, including reproductive. Case-control studies must be carried out to determine if decreases in the sex ratio over time are due to contact with and exposure to endocrine disruptors that can mimic male or female sex hormones; but effect modifiers have to be controlled. There are currently no data on people's exposure to endocrine-disrupting chemicals presented as part of these datasets.

Keywords

Prematurity; Preterm birth; Very preterm birth; Sex ratio; Fertility; Total fertility rate; Low birthweight; very low birthweight; Infant mortality; Infant death; Neonatal mortality; Neonatal death; Perinatal mortality; Perinatal death; Postneonatal mortality; Postneonatal death; Health effect; Environment; Reproductive and birth outcomes; Birth files, Births, Michigan

Bounding Coordinates[1]

West Bounding Coordinate: -90.418133999999995

East Bounding Coordinate: -82.418394000000006

North Bounding Coordinate: 48.189534000000002

South Bounding Coordinate: 41.696088000000003

Other Information on Data

Level of Geographic Detail*:* Statewide & County

Currentness Reference (when data were last updated**)*: 9/5/2023***

Frequency at which the data are updated: Annually

Data Status*:* Complete

Completeness Report

This dataset contains reproductive health and birth outcomes records for State of Michigan residents for the years 2000-2021. These data are used to calculate summary measures of reproductive and birth outcomes data at the state and county level.

This dataset reflects the most complete information available at the time of posting (based on the currentness reference above). These data come from the Michigan Division for Vital Records and Health Statistics (DVRHS). Data on the National Tracking data portal come from the National Center for Health Statistics (NCHS). NCHS only accepts new data during certain time periods, while DVRHS accepts new data any time it is available. Differences in counts, rates, and percentages between the National Tracking portal and the Michigan Tracking portal may be due to late reporting on births to DVRHS after the NCHS stops accepting data. It may also be due to out of state deliveries to Michigan residents that are often more complete in the national files.

[1] From CDC Tracking Metadata Creation Tool

Data Processing Description

The dataset was processed and created using data provided by DVRHS according to the instructions found in the CDC Standards for Nationally Consistent Data and Measures (NCDMs) within the Environmental Public Health Tracking Network, version 4.0, (ncdm_requirements_april2017.pdf (cdc.gov)). Data were queried by DVRHS staff from the State of Michigan resident birth and death files. The obstetric/clinical estimate of gestation was used.

Access Constraints

There are no access constraints for data available through the Michigan Environmental Public Health Tracking program public portal.

Use Constraints

It is recommended that all users read and fully comprehend metadata prior to data use.

LBW rates should be interpreted with caution. The LBW rate should only be one of the reproductive outcome measures being tracked, and it should be accompanied by the infant mortality rate (neonatal and postneonatal), fetal death rate if reliable, and morbidity measures.

These data cannot be used for commercial purposes and shall not be used to engage in any method, act, or practice to conduct the solicitation or advertisement of goods, services, or real estate to Michigan consumers.

Data users are prohibited from attempting to learn the identity of any person included in the data and from linking these data with any other data for the purpose of matching records to identify individuals or entities (such as hospitals).

Differences in rates over time or by area may reflect differences or changes in diagnostic techniques and criteria and in the reporting or coding of reproductive and birth outcomes.

Differences in rates by area may be due to different socio-demographic characteristics and associated behaviors. When comparing rates across geographic areas, a variety of non-environmental factors, such as access to medical care and stress, can impact the likelihood of a negative reproductive or birth outcome.

The Michigan Environmental Public Health Tracking Program and its data partners have applied appropriate cell suppression rules imposed by the data providers and/or using guidance from the CDC. Even at the county level it can be expected that the measures generated will often be based upon numbers too small to report or present without violating state and federal privacy guidelines and regulations. Staff have adhered to the cell suppression rules by suppressing rates for counts less than six. Counts between one and six over a five-year period are not suppressed. Complementary suppression has also been completed to prevent any back calculation of suppressed cells. For some data, it was necessary to increase cell sizes by combining data across time (e.g., years) and geographic areas (statewide instead of county-level data).

Security Handling Description

If data are distributed, the use constraints specified in this metadata apply to all recipients of the data.

Confidentiality of all data is required by law and strictly maintained by the Health Department staff. Section 2631 of the Public Health Code regulates procedures protecting confidentiality and regulating disclosure of data and records.

Distribution Liability

The Michigan Environmental Public Health Tracking Program is maintained, managed, and operated by the Environmental Health Bureau (EHB) within MDHHS. In preparation of these data, every effort has been made to offer the most current, correct, complete, and clearly expressed information possible. Nevertheless, some errors in the data may exist. In particular, MDHHS disclaims any responsibility for source data, compilation and typographical errors and accuracy of the information that may be contained in these data.

These data do not represent the official legal version of source documents or data used to compile these data. MDHHS further reserves the right to make changes to these data at any time without notice.

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The sale or resale of the data, or any portions thereof, is prohibited unless with the express written permission of MDHHS and DVRHS. These data may not be used for commercial purposes without first obtaining written permission from the DVRHS.

If errors or otherwise inappropriate information is brought to our attention, a reasonable effort will be made to fix or remove it. Such concerns should be addressed to the Michigan Tracking Program via email or telephone (See Contact Information below).

Custom Order Process

For access to national and multi-state unrestricted or public use data, please see: http://ephtracking.cdc.gov

For more information or access to unrestricted or public use Michigan-specific data about reproductive and birth outcomes, please visit the Michigan Infant Mortality data website.

Contact Information

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