

Heart Attack

This metadata page provides a brief summary of this dataset. More detailed data and metadata may be available from the LDH Tracking Program. For more information, please refer to the contact information on the last page under 'Questions?'

Definition

An acute myocardial infarction (AMI), also known as a heart attack, occurs when the blood supply to the heart is severely reduced or completely blocked. During a heart attack, heart muscle cells do not receive enough oxygen and begin to die. The more time that passes without treatment to restore blood flow, the greater the damage to the heart.

Data Sources

- [LDH Bureau of Health Informatics](#)
- [U.S. Census Bureau](#)

The Louisiana Department of Health (LDH) Environmental Public Health Tracking Program process heart attack data to provide to the US Centers for Disease Control and Prevention (CDC) Tracking Program, through a Cooperative Agreement.

Vintage: The latest dataset available from LDH Tracking as of January 2024:

- Hospitalization Data: data years **2000-2020**
- Hospitalization monthly data; data years **2010-2020**

Note that emergency department data are not collected or reported by the Tracking Program for heart attack. All heart attack patients are admitted and hospitalized in this emergency situation.

Data Measure(s)

The LDH Tracking Program collects data on the following measures for hospitalizations with a primary diagnosis of heart attack among persons 35 and over:

- Monthly Total Number
- Age-Adjusted Rate
- Crude Rate
- Total Number

Data measures were developed following the CDC Standards for Nationally Consistent Data and Measures (NCDMs) within the Environmental Public Health Tracking Network. The purpose of NCDMs is to ensure compatibility and comparability of data through data standardization among states and the US, resulting in measures which are useful for understanding the impact of the environment on health.

Explore Data

The LDH Health Data Explorer (<http://ldh.la.gov/tracking>) is an online query tool which allows health, environmental hazard, exposure and population data to be explored and viewed side-by-side in tables, charts, and maps. These data can be viewed, printed and downloaded for further analysis.

To *Explore Data* on the query tool:

Step 1: Select Criteria

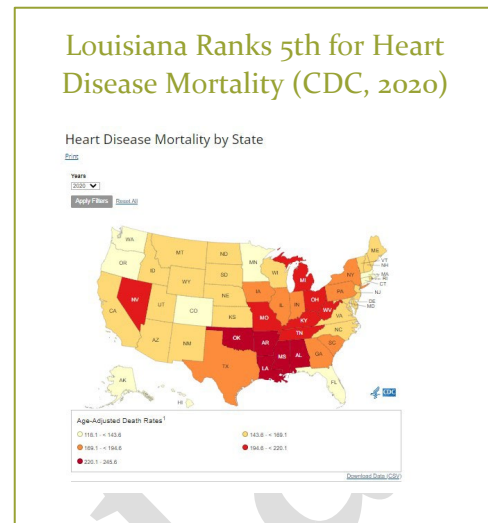
Category: **Health Outcomes**

Topic: **Hospitalizations**

Focus: **Heart Attack**

Indicator: **Acute Myocardial Infarction (AMI)**

Select 'Additional Options' such as 'Reporting Period' (month or year) and 'Measure'.



Heart Attack and your Health

According to the US CDC, from the [2020 data](#), the number of deaths in Louisiana from heart disease is 12,255 per 100,000 total population, ranking Louisiana fifth out of all states for heart attack. Research has identified several factors that increase the risk of a heart attack including hypertension, low highdensity lipoprotein (HDL) cholesterol level, high low-density lipoprotein (LDL) cholesterol level, high triglycerides, poor diet, having a family history of heart disease, and obesity.

To reduce your risk of heart disease:

- Find ways to enjoy frequent exercise in a healthy and stress-free environment
- Manage and keep other health factors in control such as blood pressure (hypertension) and blood sugar (diabetes). Medication may be necessary, for these and heart health. Check with your primary care physician.
- Eat [heart healthy foods](#) such as vegetables, fruits, whole grains, and certain dairy, proteins and oils (such as fish, seeds, nuts, avocados and legumes) in balanced amounts.

Heart Attacks and the Environment

Air pollution: Research has suggested that there is a relationship between outdoor air pollution and an increased risk of heart attack and other forms of heart disease. Short and long-term exposure to particulate pollution (or Particulate Matter) have both been linked to an increased risk of heart attacks and other forms of heart disease ([CDC Million Hearts, 2022](#)). Long term exposure to ground-level ozone may also have negative effects on heart health, as cited by the US Environmental Protection Agency ([USEPA, 2020](#)). According to the Mayo Clinic, [second-hand smoke](#) can increase your risk for coronary heart disease.

Heat: The American Heart Association ([2022](#)) has warned that precautions should be taken for older adults and people with high blood pressure, obesity or a history of heart disease and stroke in temperatures exceeding 100°F or even temperatures in the 80s with high humidity. These can cause a dangerous heat index.

Heavy Metals: New research in the Journal of the American Heart Association is demonstrating an increased risk of heart attack from heavy metal (for example, cadmium and lead) exposure ([2021](#)).

Data Methods

Data Privacy and Suppression. For these data, parishes with non-zero counts less than 6 and population less than 100,000 are flagged as suppressed. Suppressed values are not displayed. Suppression is a method of protecting health data confidentiality when small numbers are reported. Suppression rules, which vary by data source, generally restrict the extent to which health data can be shared publicly. Primary and secondary suppression techniques are used to prevent someone's personal health information from being discoverable by the general public. On the LDH Health Data Explorer, numbers and rates that are suppressed are displayed as asterisks (*) and are cross-hatched in grey on graphs and maps.

Only 'non-smoothed' data values are included in this dataset. Smoothed rates or measures are available by the [CDC Tracking Program](#) and currently include some stratifications for age groups and gender. They can be used to identify patterns or trends across a state or group of counties.

Rate Stability. Calculated rates are flagged as unstable (or unreliable) if the relative standard error (RSE) value > 30. Rates, proportions, and percentages are checked for their stability, so that trends over time and between geographic areas or persons can be evaluated with reasonable confidence. Unstable or unreliable rates, proportions, or percentages can arise from small numbers of cases or events or from small populations.

Data Limitations and Important Considerations

The following data limitations may exist for this dataset:

- a. Records are selected using primary discharge diagnosis and admission date. Only persons admitted to hospital as inpatients (admitted for at least 24 hours) are included.
- b. Hospitalization data should not be considered complete until the subsequent year of data has been published. Since the source data capture hospital discharges (rather than admissions), patients admitted toward the end of the year and discharged the following year will be omitted from the current year dataset. This may lead to the number of hospitalization admissions in the most recent year of published Tracking data to be underestimated.
- c. Data are generally updated on an annual basis. It is however important to note that there is usually a one to two year lag before data are available from the data owner.
- d. Fluctuations in rates from year to year between parishes may occur, that do not reflect a true change in health outcomes over time or geography. These can complicate trend analysis. Distortion may occur from several identified quality controls related to data entry, transfer, or extraction; hospital closure or reorganization; incomplete hospital reporting; inaccurate addresses and subsequent geocoding limitations; major population shifts due to hurricanes; and other possible factors. Rate fluctuations have been found to impact both populous and rural parishes. Work is ongoing to identify and improve both the data source(s) and processing steps along the workflow.
- e. Counts and rates based on 5 or fewer cases are suppressed where population is less than 100,000. Suppressed rates are indicated with an asterisk (*). Suppression is a statistical practice that is used to protect patient confidentiality and potentially identifying information by withholding or excluding small numbers within a specific demographic or geography. This is a standard procedure used to comply with the federal Health Insurance Portability and Accountability Act's (HIPAA) Privacy Rule.

- f. Rates shown in italics have a relative standard error greater than or equal to 30% and may be unreliable. Rates calculated based on small numbers, generally less than 12, may be unstable and should be interpreted with caution.
- g. The 95% confidence intervals (CI) for rates are shown as error bars on some corresponding graphs. Statistical significance is determined by comparing 95% confidence intervals. If the confidence intervals of two rates do not overlap, there is a statistically significant difference between them.
- h. Numbers and rates may differ slightly from those contained in other publications. These differences may be due to file updates, differences in calculating rates, diagnostic techniques reported, NCDMs standards for processing, and updates in population estimates.
- i. Practice patterns and payment mechanisms may affect diagnostic coding and decisions by health care providers to hospitalize patients.
- j. Records for persons receiving care at home, in emergency rooms and in outpatient settings are not included in these data.
- k. Veterans Affairs, Indian Health Services and institutionalized (e.g. prison) population records are also not available in these data. This may result in smaller rates.
- l. Records for persons living in Louisiana may not be included if the hospitalization occurred out of state.
- m. Persons who die from a heart attack before being admitted to the hospital are not included in this dataset.
- n. Patients may be exposed to environmental triggers in multiple locations, but hospital discharge geographic information is limited to patient residence and hospital location.
- o. Differences in rates by time or between parishes may reflect differences or changes in diagnostic techniques and criteria and in the coding. Differences in rates by area may also be due to different socio-demographic characteristics and associated behaviors. When comparing rates across parishes, it is important to note that a variety of non-environmental factors, such as access to medical care, personal behaviors such as tobacco use, health status, and diet affect the likelihood of being hospitalized for a heart attack.
- p. Persons hospitalized for a heart attack multiple times throughout the year may be counted for each hospitalization, thereby raising the rates. Although duplicate records and transfers from one hospital to another are excluded, the measures are based upon events, not individuals. When multiple admissions are not identified, the true prevalence will be overestimated.
- q. While every effort is made to exclude records of transfers between hospitals for heart attack hospitalizations, this measure may still include some transfers for the same person for the same event. Thus, variations in the percentage of transfers or readmissions for the same heart attack event may vary by geographic area and impact rates.
- r. Because census data are only available every ten years, the postcensal population estimates are used when calculating rates for the intervening years. These estimates may not accurately reflect demographic changes for years in which large population shifts occur.
- s. Differences in counts and rates in years prior to 2015 (ICD-9-CM) compared with 2015 (ICD-9CM and ICD-10-CM) and subsequent years (ICD-10-CM) could be a result of a coding change and not an actual difference in the number of events (CDC, 2023).

Data Re-release

This is a public dataset which can be freely shared. Personally identifiable health information has been removed. Please refer to the Data Methods section of these metadata from more information.

Data Citations

Please cite the US CDC, LDH Environmental Public Health Tracking Program Cooperative Agreement NUE1EH001490, and any data source(s) listed on Page 1 when re-sharing or applying these data in analyses or publications.

Disclaimer

Data are intended to spur further research and should be used only as a starting point to understanding how the environment and other contributing factors may be connected to disease. Datasets presented on the LDH Health Data Explorer site are intended to answer some basic questions, but should ultimately lead to further inquiry and more detailed study.

Data limitations should be noted when conducting exploratory ecological studies with these data. Limitations may include data gaps, reporting discrepancies (for example, a disruption of reporting or instrument recording) and insufficient data are all potentially confounding factors. There are numerous additional factors which may contribute to disease onset. These include genetics, access to health care, existing health conditions, medicines, other chemical substances we come into contact with or ingest, nutrition, route and duration of exposure, level of activity, level of stress, and others.

Responsible use of this data requires exercising caution when drawing conclusions based solely on views of the limited available data. Any perceived relationship, trend, or pattern apparent in the data should not be interpreted to imply causation; may in fact be unrelated; and should be regarded as preliminary, and potentially erroneous, until more in-depth study and if applicable, statistical evaluation, can be applied.

The LDH Bureau of Health Informatics and Environmental Public Health Tracking Program cannot guarantee the completeness of the information contained in these datasets and expressly disclaim liability for errors and omissions in their content.

Additional Information

Please visit the following links for more information:

- CDC|[Coronary Heart Disease](#)
- [American Heart Association](#)
- National Institutes for Health | [Heart Healthy Living](#)

Questions?

- Email: healthdata@la.gov
- Website: <http://ldh.la.gov/tracking>
- Toll free Phone: 1-888-293-7020