



MISSOURI DEPARTMENT OF
**HEALTH &
SENIOR SERVICES**

Office of Epidemiology (OOE)

Anthony Belenchia, PhD
Chief, Office of Epidemiology

Office of Epidemiology Structure

- One-third of the data and informatics unit (along with BHCADD and BDMI)
- OOE comprises over 30 talented professionals including research and data analysts and epidemiologists, organized into four specialized teams led by senior epidemiologists.

**Karen
Harbert**

**Senior Maternal
and Child Health
Epidemiologist**

**Kate
Cleavinger**

**Senior
Communicable
Disease Senior
Epidemiologist**

**Joseline
Hernandez**

**Senior Cancer
Epidemiologist
and PHIG
Evaluator**

**Anthony
Belenchia**

**Senior Chronic
Disease
Epidemiologist**

Office of Epidemiology Mission and Purpose

To protect and improve the health of Missouri residents by providing timely, accurate, and actionable epidemiologic data, analysis, and expertise that inform public health policy, guide programs, and support disease prevention and promote health across Missouri.

Office of Epidemiology Core Functions

Surveillance and Data Stewardship

Collect, manage, and analyze data from public health surveillance systems:

- BRFSS
- CLS
- YRBS
- PRAMS
- Disease Registries

Program and Policy Evaluation

Support the development of evaluation plans and performance measures; conduct evaluations to assess the effectiveness, reach, and impact of public health programs and policies.

Outbreak Investigation and Response

Lead or support investigations of disease outbreaks, clusters, or unusual patterns of illness, and assist with coordinated response and containment strategies.

e.g. cancer inquiries, case tracking

Data-to-Action Translation

Generate reports, visualizations, and evidence summaries that:

- inform decision-making
- support grant applications
- guide interventions
- shape policy development

Technical Assistance and Consultation

Provide expert guidance to internal DHSS bureaus, local public health agencies, and community partners on epidemiologic methods, data interpretation, and research design.

*Needs assessments and landscape/gap analyses

Surveillance and Data Stewardship

OOE Data Sources

Vital Statistics

Missouri Vital Statistics

National Vital Statistic System

CLS

Missouri County Level Study

BRFSS

Behavioral Risk Factor Surveillance System

YRBS

Youth Risk Behavior Surveillance System

PAMR

Pregnancy-Associated Mortality Review

MCR

Missouri Cancer Registry

PRAMS

Pregnancy Risk Assessment Monitoring System

NSCH

National Survey of Children's Health

HIV/STD/AIDS

DHSS HIV/Hepatitis and STI Dashboards

Missouri County Level Study (CLS)

Who is included in the system?

- Adult Missourians (>50,000 respondents)
- Conducted every 5-6 years (2011, 2016, 2022)

What kind of questions it addresses?

Core Section

Health status, physical activity, cardiovascular health conditions, tobacco use and seat belt use

Demographics (age, race, marital status, education and employment status)

Emerging Core

Priority topics

Level of Detail

State, regional, and county data

Detailed demographic subgroup data within counties or regions

Where to Find Data?

[MOHealthData.org](https://mohealthdata.org)

DHSS Data Request

Most Recent Data Year Available

2022

Behavioral Risk Factor Surveillance System

Who is included in the system?

- U.S. adult residents
- All 50 states, D.C., and 3 U.S. territories
- Missouri stratified by 7+ regions
- Conducted yearly

What kind of questions it addresses?

Core Section

Health status, physical activity, cardiovascular health conditions, tobacco use and seat belt use

Demographics (age, race, marital status, education and employment status)

Optional Module

States can choose based on needs

Emerging Core

Priority topics

Level of Detail

State and Regional

Detailed demographic subgroup data available at the state level

Where to Find Data?

[MOHealthData.org](https://mohealthdata.org)

[CDC - BRFSS Prevalence Data and Data Analysis Tools](#)

DHSS Data Request

Most Recent Data Year Available

2023

Youth Risk Behavior Surveillance System

Who is included in the system?

- Students grades 9-12
- Administered every other year

What kind of questions it addresses?

Student demographics

- Sex, sexual identity, race/ethnicity, grade

Youth health behaviors

- Injury and violence, bullying and mental health

Substance use behaviors

- Electronic vapor product, alcohol use and other drug use

Student experiences

- Parental monitoring, school connectedness and unstable housing

Level of Detail

- State and National

Detailed demographic subgroup data at the state level

Where to Find Data?

[MOHealthData.org](https://healthdata.mo.gov/)

[YRBSS Data and Documentation](#)

[DHSS Data Request](#)

Most Recent Data Year Available

2023

Pregnancy Risk Assessment Monitoring System

Who is included in the system?

Mothers who are Missouri residents and recently delivered a live-born infant during the preceding 2-4 months

What kind of questions it addresses?

- Pregnancy experience related questions
- Pregnancy intention
- Folic acid consumption
- Contraceptive use
- Health insurance
- Prenatal care
- Infant health care
- Postpartum depression

Level of Detail

- National
- State

Where to Find Data?

[PRAMS Data | CDC](#)

[MO \(PRAMS\) | Dashboard](#)

Most Recent Data Year Available

2023

National Immunization Surveys

Who is included in the system?

Telephone interviews with parents/guardians in all 50 states, & D.C.

Monitor vaccination coverage for:

- Children 19–35 months
- Teens 13–17 years
- Flu vaccines for children 6 months–17 years
- COVID-19 vaccination
 - Children and teens in eligible age groups
 - Adults 18 years and older.

What kind of questions it addresses?

- 5 surveys (based on age)

Childrens / Teen Survey

- DOB of child
- # of eligible children
- Highest grade of child
- Marital status
- Health insurance

Level of Detail

- National
- State

Where to Find Data?

[NIS Data, Tables, and Documentation | CDC](#)

[NSCH Interactive Data Query \(2016 – present\)](#)

Most Recent Data Year Available

2023

Missouri Cancer Registry

- Statewide cancer surveillance system and registry
 - Includes data related to patient demographics and tumor site, stage, and histology
 - Annual data with a 2-3 year lag time (most recently available is 2022)
 - Data availability
 - Publicly available – aggregate summaries
 - cancerregistry.missouri.edu/instantAtlas
 - De-identified individual-level data available via data request IRB approval w/ DUA

Program Evaluation and Planning

Program Evaluation



Figure 2. The continuous program improvement cycle, used internally by the Centers for Disease Control and Prevention Program Performance and Evaluation Office. The parts of the cycle operate together to iteratively implement, test, and refine program approaches for maximum effectiveness.

Source:

<https://www.cdc.gov/publichealthgateway/publichealthservices/essentialhealthservices.html>

Program Evaluation

- Program evaluation focuses on addressing whether the intervention is working.
- Evaluation includes questions related to how and if a program is working as it was intended and if there are any unintended consequences
- Types of evaluation:
 - Formative
 - Process
 - Impact
 - Outcomes or Summative Evaluation
- Research seeks to prove, evaluation seeks to improve.

Michael Quinn Patton, Founder and Director of Utilization-Focused Evaluation

Program Evaluation

Multiple state and federal data sources to monitor progress towards identified priorities

Examples include, but not limited to:

- Missouri Public Health Information System (MOPHIMS) – Centralized Data Dissemination Tool

- <https://healthapps.dhss.mo.gov/MoPhims/MOPHIMSHome>

- PRAMS, BRFSS, County Level Study

- Communicable Disease Data (STIs)

- American Community Survey (ACS) – Census Bureau

- <https://www.census.gov/programs-surveys/acs>

- National Center for Health Statistics (NCHS)

- <https://www.cdc.gov/nchs/nvss/index.htm>

Program Planning

“Needs Assessment is a systematic process to acquire an accurate, thorough picture of the strengths and weaknesses of a state’s public health system that can be used in response to the preventive and primary care services needs for ALL pregnant women, mothers, infants (up to age one), children including children with special health care needs.”

Data-to-Action Translation and Data Accessibility

Pregnancy Risk Assessment Monitoring System (PRAMS) Dashboard

Welcome to the Missouri Pregnancy Risk Assessment Monitoring System (PRAMS) Dashboard

1. Use the drop down menu to the right to filter the topic area of interest.

Topic Area

Breastfeeding

Measure

Ever Breastfed

Year

2016-2022

2. Use the menus to the right to filter the bar chart below to the desired time frame and subject.

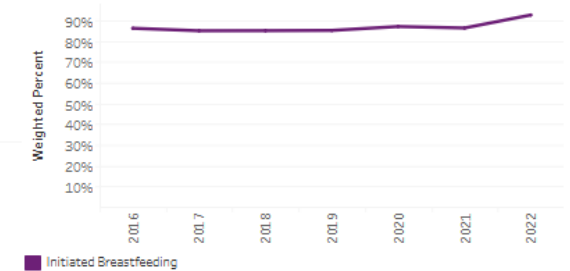
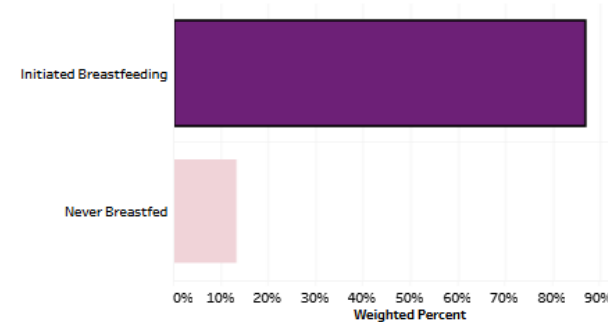
*A new Measure will need to be selected after changing the Topic Area.

*After viewing a Supplement or the Opioid Call Back Survey the year will need to be reselected

Ever Breastfed

3. Hover over the bar graph for more information. Select a bar to filter trend lines and generate contingency tables below. Click again to reset your selection.

Trend Lines For: Ever Breastfed



Early Care and Education Report Dashboard

ECE QUARTERLY REPORT 10/1/2024 - 12/31/2024 (FY 25: Q1)

Go NAPSACC

Go NAPSACC is a direct education and PSE change intervention designed to enhance nutrition and physical activity practices in early care and education programs. Go NAPSACC targets child care policy, practice and environmental influences on nutrition and physical activity behaviors in young children. ECE programs work with technical assistance (TA) consultants to work through the 5 steps: Assess, Plan, Take Action, Learn More and Keep It Up.

ALL TIME*

TOTAL PROGRAMS WITH PRE/POST

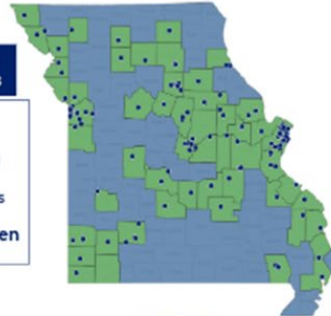
149

REACH
6,682 Children

LAST 12 MONTHS

16

Programs
817 Children



by Program Type (All time)

Pre-K	Family Home	Center*	Head Start
5	46	87	11

*includes license exempt programs

by Funding (All time)

SPAN	Other
9	140

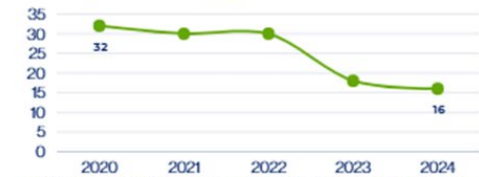
SPAN strategies are statewide, but implementation funding is prioritized to counties with high obesity rates and health disparities.



ECE QUARTERLY REPORT

Go NAPSACC

Programs by year



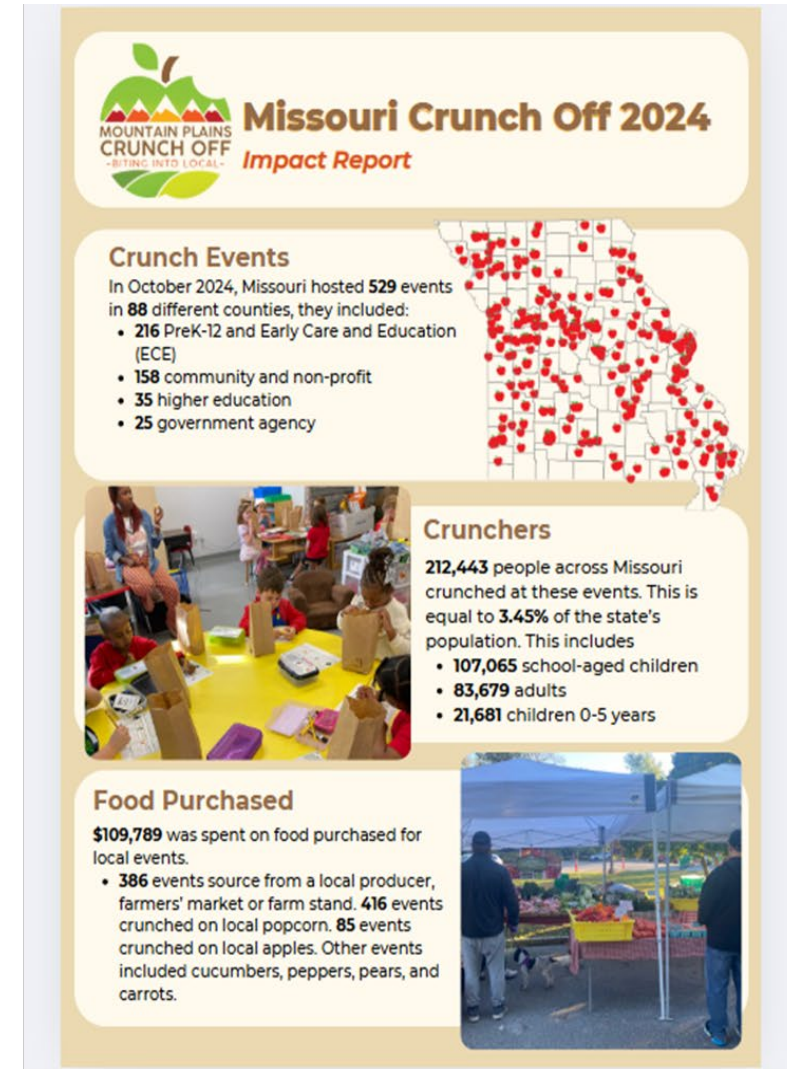
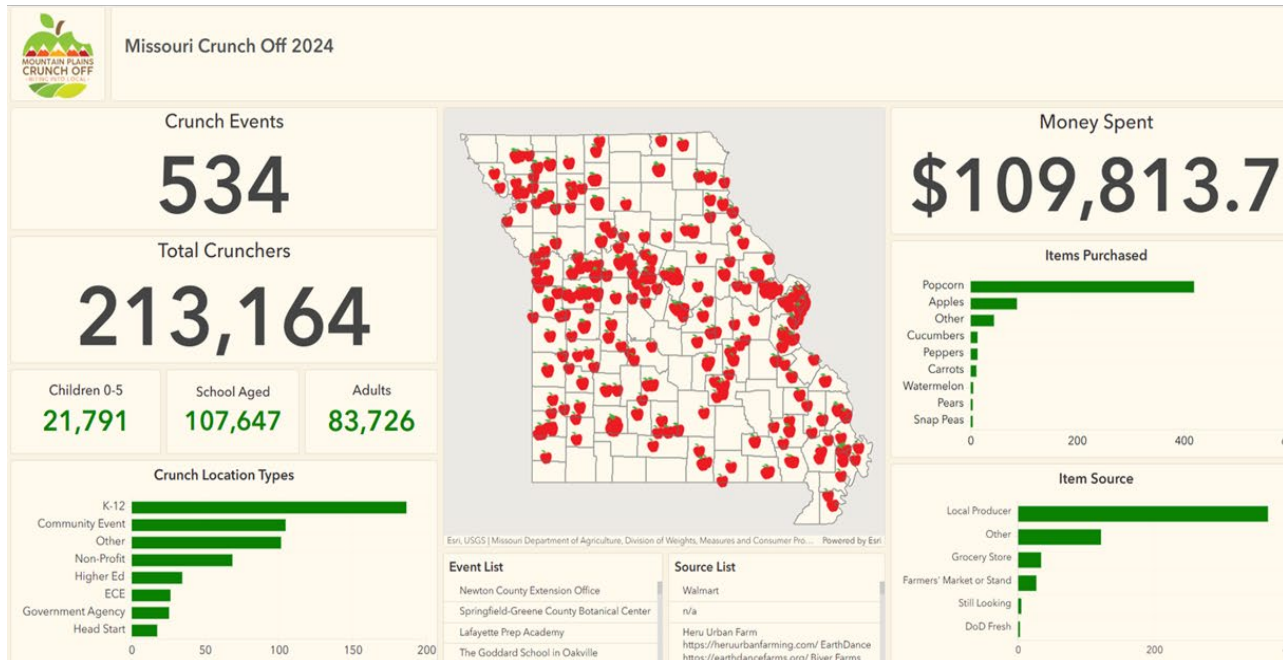
This includes programs that have completed a pre- and post-assessment in at least one module.

Modules Completed

ECE programs can complete more than one module. For example, an ECE might complete both the nutrition and physical activity modules. Assessments include an average of all programs.



Farm to School-ECE Event Dashboard



DHSS HIV\Hepatitis and STI Dashboards

<https://health.mo.gov/data/hivstdaids/data.php>

[Data to Download](#)



Sexually Transmitted Infections

Dashboard is updated monthly on or around the 15th. Data last updated on 5/17/2024.
2023 and 2024 data are provisional and subject to change as additional reports are recieved.

Select filters:

Infection

- ☒ (All)
- ☒ Chlamydia
- ☒ Gonorrhea
- ☒ Syphilis

Cancel

Apply

Year

- ☒ (All)
- ☒ 2013
- ☒ 2014
- ☒ 2015
- ☒ 2016
- ☒ 2017
- ☒ 2018
- ☒ 2019
- ☒ 2020
- ☒ 2021
- ☒ 2022
- ☒ 2023

Cancel

Apply

County

(All)

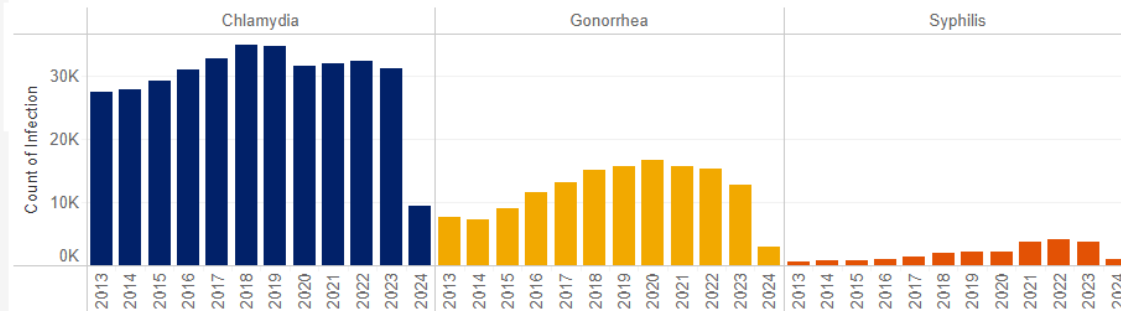
Demographics

- ☒ Age Group
- ☐ Race
- ☐ Sex

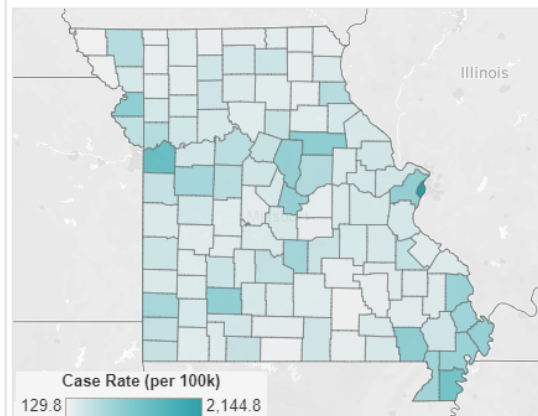
[Download PDF](#)

Hover over data elements of interest to learn more

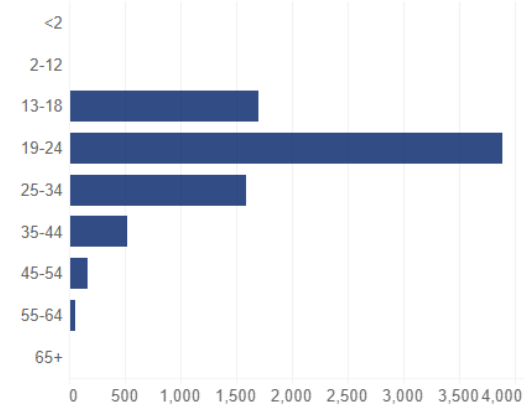
Statewide Case Count by Year



Statewide Case Rate (per 100k)



Statewide Case Rate (per 100k) by Age Group



MOhealthdata.org



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[Missouri County-Level Study](#)

[About](#)

[Support](#)

Visualize Health Data Across Missouri

Access data, maps and tools to support county-level study reports and other public health activities.

[Build a report ↗](#)

[Make a map ↗](#)



Missouri County-Level Study

1. Location

2. Data Indicators

3. Reports

COUNTY REGION STATE

County List

Select County
Howard County, MO
Howell County, MO
Iron County, MO
Jackson County, MO
Jasper County, MO
Jefferson County, MO
Johnson County, MO

Assessment Location

Report Location
✕ Boone County, MO
✕ Jackson County, MO

MOhealthdata.org

1. Location

2. Data Indicators

COUNTY

REGION

STATE

Region List

Select Region

Filter list...

City of Columbia

City of St. Joseph

Jefferson City

City of Springfield

Independence

City of Joplin

Kansas City

Jackson County

Rest of KC Metro Region

St. Louis County

St. Louis City

Rest of St. Louis Metro Region

1. Location

2. Data Indicators

COUNTY

REGION

STATE

State List

Missouri

Missouri

MOhealthdata.org

Data Indicators

☐ Select all indicators

☐ Health Status ▼

☐ Chronic Conditions and Diseases ▲

☐ Arthritis (Crude) ⓘ

☐ Current Asthma (Crude) ⓘ

☐ Cancer (Crude) ⓘ

☐ Emphysema or Chronic Bronchitis (Crude) ⓘ

☐ Coronary Heart Disease (Crude) ⓘ

☐ Depressive Disorder (Crude) ⓘ

☒ Diabetes (Crude) ⓘ

☐ Heart Attack (Crude) ⓘ

☐ High Blood Pressure (Crude) ⓘ

☐ High Cholesterol (Crude) ⓘ

☐ Kidney Disease (Crude) ⓘ

☐ Obese (>30 BMI) (Crude) ⓘ

☐ Overweight (25.0 - 29.9 BMI) (Crude) ⓘ

☐ Stroke (Crude) ⓘ

☐ Health Behaviors ▲

☐ Binge Drinking (Crude) ⓘ

☐ Heavy Drinking (Crude) ⓘ

☐ Current Cigarette Smoking (Crude) ⓘ

☐ Cigarette Quit Attempt Past Year (Crude) ⓘ

☐ Inadequate sleep (Crude) ⓘ

☒ No Leisure Time Physical Activity (Crude) ⓘ

☐ Access to Care and Preventive Practices ▼

☐ Environment & Infrastructure ▼

[< Location](#)

[Reports >](#)

MOhealthdata.org

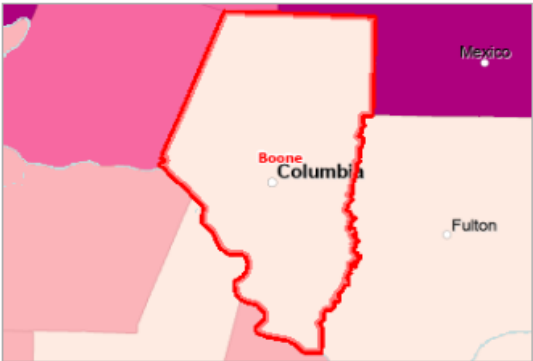
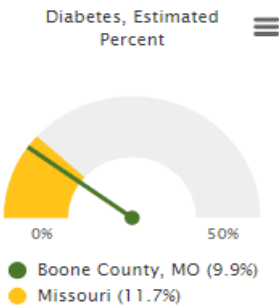
Diabetes (Crude)

In the report area, the estimated percentage of adults aged ≥ 18 who reported ever having diabetes is 9.9%. The value for this area is lower than the statewide rate of 11.7%. Data for this indicator are derived from the question: (Ever told) you have diabetes (If ‘Yes’ and respondent is female, ask ‘Was this only when you were pregnant?’). If Respondent says pre-diabetes or borderline diabetes, use response code 4.).

Report Area	Diabetes, Estimated Count	Diabetes, Estimated Percent	State Comparison
Boone County, MO	1,287	9.9%	Not Significant
Missouri	50,899	11.7%	-

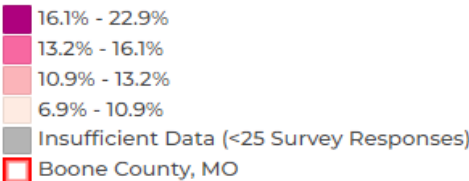
Note: This indicator is compared to the state average.

Data Source: Missouri Department of Health and Senior Services, Missouri County-Level Study (CLS). 2022. → Show more details



View larger map

Chronic Conditions and Diseases: Has Diabetes (Crude), Estimated Prevalence Rate by County, Missouri CLS 2022



Diabetes Estimates by Gender

The table and chart below report data for this indicator by self-reported gender.

Jump to...

Chronic Conditions and Diseases

Diabetes (Crude)

Health Behaviors

No Leisure Time Physical Activity (Crude)



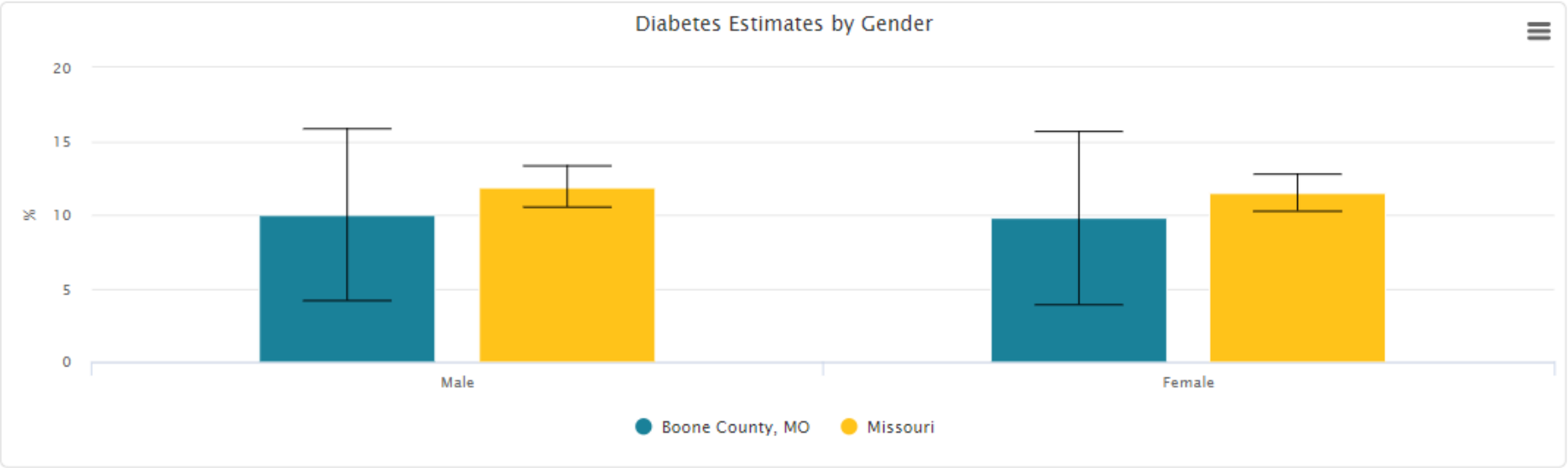
Mohealthdata.org

Diabetes Estimates by Gender

The table and chart below report data for this indicator by self-reported gender.

Report Area	Male	Female
Boone County, MO	10.00%	9.80%
Missouri	11.90%	11.50%

Data Source: Missouri Department of Health and Senior Services, Missouri County-Level Study (CLS). 2022. → [Show more details](#)



Looking Ahead in OOE

- Modernizing surveillance systems
 - MOHSAIC
 - Show-Me World Care
 - MOhealthdata.org
 - Online survey administration
- Enhancing real-time data access
 - Utilizing EHR to improve chronic disease reporting times
 - Systems integrations and automation

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