



**WISCONSIN HEALTH  
INFORMATION ORGANIZATION**

**Hospital Admission Rates for Short-Term Complications of Diabetes:  
Comparison of Wisconsin Counties  
January 2022**

The Wisconsin Health Information Organization (WHIO) is a not-for-profit organization whose mission is to, “Create more health data and better information to advance actions.” The WHIO is certified through the Centers for Medicare and Medicaid Services (CMS) program as a Qualified Entity. As a Qualified Entity, the WHIO has received Medicare Fee for Service claims data from CMS. The Medicare Fee for Service claims data was combined with other claims data the WHIO receives from commercial health plans, self-funded employers, and the Wisconsin Medicaid program to create this report.

## **Why Does this Information Matter?**

Diabetes is a chronic medical condition affecting an increasing number of Wisconsin citizens each year. According to the United Health Foundation’s America’s Health Rankings, the percentage of Wisconsin adults who reported being told by a health professional that they have diabetes increased from 5.3% to 8.7% in the last 20 years.

(<https://www.americashealthrankings.org/explore/annual/measure/Diabetes/state/WI>)

The Centers for Disease Control (CDC) describes diabetes as a health condition that affects how your body turns food into energy. According to the CDC, “Most of the food you eat is broken down into sugar (also called glucose) and released into your bloodstream. When your blood sugar goes up, it signals your pancreas to release insulin. Insulin acts like a key to let the blood sugar into your body’s cells for use as energy. If you have diabetes, your body either doesn’t make enough insulin or can’t use the insulin it makes as well as it should. When there isn’t enough insulin or your cells stop responding to insulin, too much blood sugar stays in your bloodstream. Over time, high blood sugar can cause serious health problems such as heart disease, vision loss, and kidney disease.” (<https://www.cdc.gov/diabetes/basics/diabetes.html>)

Successful management of diabetes can be measured in several ways. This report focuses on one measure of care for patients with diabetes: hospital admissions for patients who had short-term complications of diabetes. This measure evaluates potentially avoidable hospitalizations for diabetes - an ambulatory care sensitive condition - where effective primary and community care can help to prevent the need for a hospital admission.

## **Report Overview**

This report provides the rate at which people with diabetes, who live in a specific county, were hospitalized for short-term complications (ketoacidosis, hyperosmolarity, or coma) of diabetes. The information is reported as a rate per 100,000 people in each county so that the rates can be compared. The information was created using the U.S. Department of Health and Human Services, Agency for Healthcare Research and Quality (AHRQ) measure Prevention Quality Indicator 01 (PQI 01): Hospital Admission Rates for Short-Term Complications of Diabetes. A summary of the PQI01 measure specification is below. Additional information is available at [qualityindicators.ahrq.gov](http://qualityindicators.ahrq.gov).

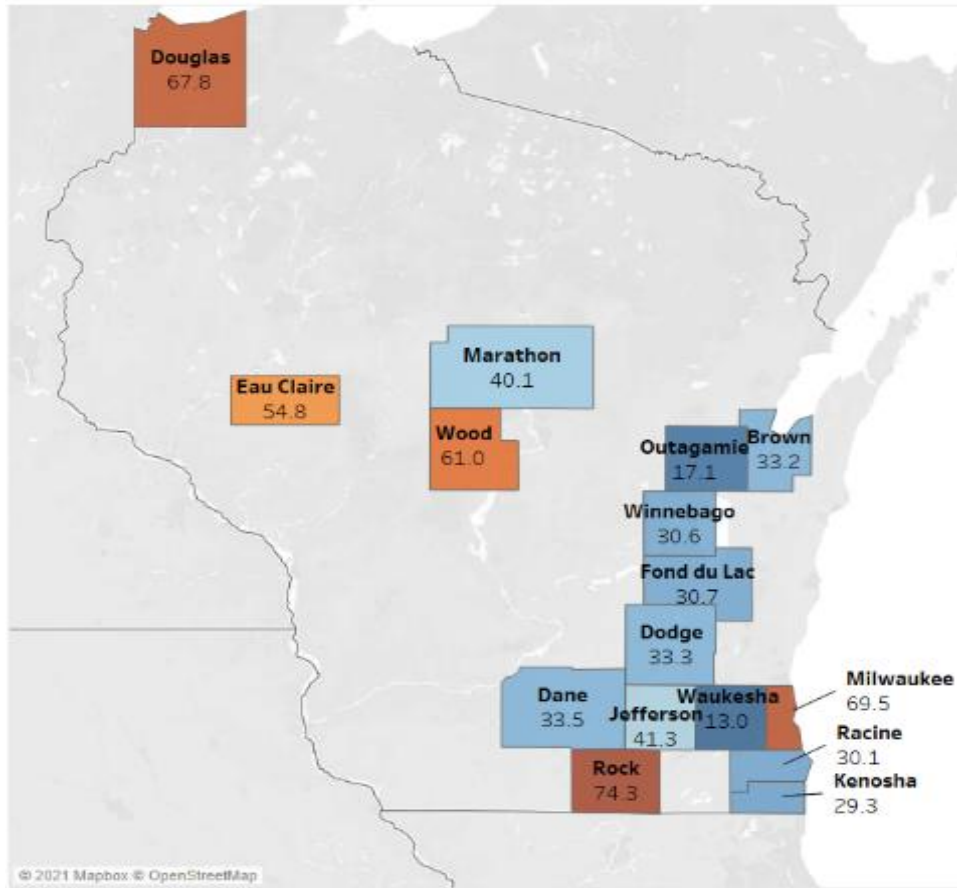
To be included in this report, the hospital admission must have met the criteria below.

- The hospital admission occurred between January 1 and December 31, 2018
- The patient is 18 years or older as of the hospital admission date
- The admission had one or more of the following principal diagnoses (full description in the Appendix)
  - Diabetes with ketoacidosis
  - Diabetes with hyperosmolarity
  - Diabetes with coma
- The admission is not related to obstetrical care
- The admission is not the result of a transfer from another facility
- The claim record includes the patient's age, gender, location, and the principal diagnosis

To calculate the PQI01 hospital admission rate, the number of admissions in each Wisconsin county was divided by the population of each county using the U.S. Census Bureau's 2018 county population estimates. This figure was then multiplied by 100,000 to arrive at a rate per 100,000 people for each county. Patients with admissions were assigned to a county based on their address at the time of the admission, not by the location of the hospital. Each county that is included in this report had at least 30 admissions for patients who met the criteria above.

The map and table below indicate that there are differences in hospital admission rates for short term complications of diabetes across the 16 Wisconsin counties that had at least 30 hospital admissions to be included in this report. A lower number is a better result. Health care organizations, physicians, government officials, public health professionals, and other health care leaders can use this information to inform their policies and programs.

## Diabetes Short-Term Complications – Wisconsin’s Adult Inpatient Admission Rates, 2018



County	Hospital Admissions	Population	Admissions per 100,000 Population
Rock	119	160,120	74.3
Milwaukee	656	944,099	69.5
Douglas	30	44,246	67.8
Wood	46	75,381	61.0
Eau Claire	57	103,959	54.8
Jefferson	35	84,692	41.3
Marathon	55	137,237	40.1
<b>Wisconsin</b>	<b>2,191</b>	<b>5,854,594</b>	<b>37.4</b>
Dane	182	543,408	33.5
Dodge	30	90,005	33.3
Brown	88	264,821	33.2
Found du Lac	32	104,370	30.7
Winnebago	52	169,861	30.6
Racine	59	195,766	30.1
Kenosha	50	170,514	29.3
Outagamie	32	187,661	17.1
Waukesha	53	406,785	13.0

Note: Counties with less than 30 hospital admissions in 2018 for the PQI01 measure are not included in this report.

## Appendix: Frequently Asked Questions

Q: What is WHIO?

A: The WHIO is Wisconsin's All-Payer claims database, whose purpose is to provide health care data and information to evaluate the health of Wisconsinites and the performance of the health care delivery system. The WHIO Board of Directors includes health care organization, clinician, health plan, employer, state agency, and health IT representatives.

Q: Are you using records that identify individual patients' private information?

A: No. Patient privacy is the highest priority for the WHIO. The data used for this report has been "scrubbed" to remove data that would identify an individual person.

Q: Where does the information that generated this report come from?

A: The WHIO receives medical and pharmacy claims, and insurance eligibility records, from 15 Wisconsin health plans, a large self-funded employer coalition, a pharmacy benefits management organization, the Wisconsin Medicaid program, and CMS. These records contain the data elements needed to create the measure results in this report.

Q: What is the minimal amount of data required to be included in this report?

A: Each county must have 30 or more admissions in 2018 by patients who met the criteria above to be included in this report.

Q: What are the short-term diabetes conditions used for this report?

A: Admissions were included if the patient had diabetes and one of the diagnoses below.

- **Ketoacidosis** is a serious complication of diabetes that occurs when your body produces high levels of blood acids called ketones. The condition develops when your body can't produce enough insulin to meet the demand. Insulin normally plays a key role in helping sugar (glucose) - a major source of energy for your muscles and other tissues - enter your cells. Without enough insulin, your body begins to break down fat to be used instead of sugar for energy. This process creates a buildup of acids in the bloodstream called ketones, eventually leading to diabetic ketoacidosis if untreated.
- **Hyperosmolarity** is a serious condition caused by extremely high blood sugar levels. In diabetic hyperosmolar syndrome, your body tries to rid itself of the excess blood sugar by passing it into your urine. Left untreated, diabetic hyperosmolar syndrome can lead to life-threatening dehydration.
- **Coma** is a prolonged state of unconsciousness. During a coma, a person is unresponsive to their environment and cannot be awakened by any stimulation, including pain.

For more information about the WHIO or this report, please contact us at [info@whio.org](mailto:info@whio.org) or visit our website [whio.org](http://whio.org).



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