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# Wisconsin Health Care Data Report

- Utilization and Charges: Hospitals and Freestanding Ambulatory Surgery Centers
- Emergency Department Visits

**2018**

**September 2019**

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The data for the **Health Care Data Report, 2018** was collected from Wisconsin hospitals and freestanding ambulatory surgery centers (FASCs), under Chapter 153, Wisconsin Statutes. This report presents an annual summary of utilization and charges at those facilities. This publication is not an exhaustive compilation of all inpatient and FASC data collected.

The portion of the report devoted to inpatient data contains information on services provided to hospital inpatients, the primary reasons for hospitalization, charges for services received, and the most common diagnostic conditions. It also contains selected information for individual hospitals.

The section devoted to ambulatory surgery data reviews utilization and charges for patients undergoing selected principal ambulatory surgical procedures at hospitals and FASCs.

The section devoted to emergency department data contains information on services provided to different demographic groups of patients, the most common diagnostic conditions, and External Cause Code diagnostic reasons for visits.

General medical-surgical (GMS) and specialty hospitals (excluding federally operated facilities) provided inpatient data. This report includes data from 130 GMS hospitals, six long-term acute care (LTAC) hospitals, twelve psychiatric hospitals, one alcohol and other drug abuse (AODA) hospital, three rehabilitation hospitals, and two state-operated mental health institutes that reported data from 2018. Ambulatory surgery data were collected from 130 GMS hospitals and 79 FASCs.

WHA Information Center is responsible for collecting and disseminating Wisconsin hospital and FASC data under Chapter 153, Wisconsin Statutes.

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## SELECTED FINDINGS

### Inpatient Data

- In 2018, Wisconsin hospitals reported 593,020 inpatient hospitalizations, with 592,985 hospitalizations having stays of less than 1,000 days, which qualified them for inclusion in this report. These resulted in 2.7 million days of care and total billed charges of \$22.1 billion (see Table 1 for details).
- On average, a hospital patient was charged \$37,211 per hospitalization during 2018. In general medical-surgical (GMS) hospitals, the average inpatient charge was \$37,738. In the non-GMS (specialty) hospitals, charges differed between long-term care and short-term specialty care. The average charge was \$152,047 in LTAC hospitals, \$28,788 in the alcohol and other drug abuse (AODA) hospital, \$15,590 in psychiatric hospitals, \$43,639 in rehabilitation hospitals, and \$28,531 at the state-operated mental health institutes (see Table 2 for details).
- The average hospital stay was 4.6 days. Patients stayed an average of 4.2 days at GMS hospitals, 30.8 days at LTAC hospitals, 15.5 days at the AODA hospital, 6.4 days at psychiatric hospitals, 13.2 days at rehabilitation hospitals, and 26.8 days at the state-operated mental health institutes (see Table 2 for details).
- In 2018, there were 59,272 obstetrical hospitalizations and 62,321 neonatal hospitalizations. There were also 70,213 cardiovascular, 62,747 orthopedic, 41,072 psychiatric, and 14,609 AODA-related hospitalizations in Wisconsin (including rehabilitation hospitals and state-operated mental health institutes). Combined, these accounted for 52 percent of all hospitalizations in the state.
- The most common reasons for hospitalization were related to childbirths. These included Normal Newborn, Birthweight 2500+ grams (APR-DRG 640) and Vaginal Delivery (APR-DRG 560). Together, these two APR-DRGs represented 16 percent of all hospitalizations.
- Most neonatal stays were classified as Normal Newborn, Birthweight 2500+ grams (APR-DRG 640), accounting for 53,913 hospitalizations (87 percent of all neonatal hospitalizations) with an average charge of \$4,419 and an average length of stay of 2.1 days (see Table 5 for details).
- Seventy-three percent of all childbirths were classified as vaginal deliveries (APR-DRGs 541, 542, and 560). Vaginal-delivery childbirths accounted for 43,393 hospitalizations at an average charge of \$11,939. In 6.2 percent of these childbirths, there were complications or additional surgery at the time of delivery (e.g., sterilization, etc.) (see Table 4 for details).
- Twenty-seven percent of all newborns were delivered by Cesarean section, also called C-sections (see Table 4 for details).
- Statewide, 5,239 patients had open-heart surgery at 42 GMS hospitals, with an average length of stay of 7.6 days and an average charge of \$151,411.
- Four GMS hospitals performed a total of 57 heart transplants (APR-DRG 002; MDC 05), with an average charge of \$1,237,679 and an average length of stay of 51.9 days.
- The most expensive APR-DRGs were Neonate with External Heart and Lung Oxygen Support (APR-DRG 583), at an average charge of \$1,548,038 and Heart and/or Lung Transplant (APR-DRG 002), at an average charge of \$1,119,980.

Combined, they accounted for only 101 hospitalizations, yet their complexity and length of stay resulted in \$117 million total charges and 5,030 patient days.

- The APR-DRGs generating the most total charges were Knee Replacement (APR-DRG 302), at \$715 million, and Blood Infection/Septicemia (APR-DRG 720), at \$1.2 billion.
- Females accounted for 56 percent of all hospitalizations. Eighteen percent of hospitalizations among females were obstetric-related.
- During 2018, injury-related hospitalizations and ambulatory surgeries accounted for \$4.7 billion in charges at hospitals and FASCs.

### **Ambulatory Surgery Data**

- Ambulatory surgery procedures were performed at 130 Wisconsin GMS hospitals and 79 FASCs in 2018. Data for 979,001 cases were collected: 725,064 from hospitals and 253,937 from FASCs.
- Cataract Surgery with Intraocular Lens was the most frequently reported principal ambulatory procedure in 2018, with 71,565 cases.
- The principal procedure producing the highest median charge among the 20 common principal procedures was Left Heart Artery/Ventricle Angiography, at \$16,585. The least expensive among the top 20 most common principal procedures was Interlaminar Injection with a median charge of \$2,156.

### **Emergency Department Data**

- In 2018, Wisconsin hospitals reported over 1.8 million visits to hospital emergency departments.
- The most common primary diagnoses associated with emergency department visits was symptoms and signs involving the digestive system, representing about nine percent of all visits.
- Included in the 2018 emergency department visits were 416,698 visits (approximately 23 percent of the overall total) related to all types of injury and poisoning.
- Injury-related emergency department visits accounted for \$1.0 billion in charges (approximately 22 percent of the overall total).

## Comparison to 2017 Data

- Compared to 2017, the number of hospitalizations in 2018 decreased by 1.5 percent while the number of patient days increased by 0.6 percent. The average length of stay increased by 2.2 percent (see Table 1 for details).
- Statewide, the average charge per hospitalization rose from \$35,429 to \$37,211 (5.0 percent) between 2017 and 2018 (see Table 1 for details).
- The average charge per hospitalization increased from \$35,823 to \$37,738 (5.3 percent) at GMS hospitals, from \$43,604 to \$43,639 (0.1 percent) at the rehabilitation hospitals, from \$25,179 to \$28,788 (14.3 percent) at the AODA hospital, from \$26,699 to \$28,531 (6.9 percent) at the state-operated mental health institutes, and decreased from \$153,854 to \$152,047 (1.2 percent) at LTAC hospitals, from \$15,796 to \$15,590 (1.3 percent) at psychiatric hospitals (see Table 3 for details).
- The average length of stay increased from 4.1 days to 4.2 days (1.9 percent) at GMS hospitals, from 6.3 days to 6.4 days (1.6 percent) at psychiatric hospitals, from 30.2 days to 30.8 days (2.1 percent) at the LTAC hospitals, from 13.6 days to 15.5 days (14.0 percent) at the AODA hospital, and from 24.8 to 26.8 days (7.7 percent) at the state-operated mental health institutes
- The average length of stay decreased from 14.2 days to 13.2 days (6.7 percent) at the rehabilitation hospitals.
- The 40 most frequently performed ambulatory surgery procedures comprised 60 percent of all reported cases, a 5 percent increase from 2017. Charges for the top 40 procedures combined increased 1.7 percent from 2017. Some fluctuations in utilization may be observed compared to previous years.
- The number of reported emergency department visits decreased by 1.7 percent, from 1.844 million in 2017 to 1.813 million in 2018.

## **READER'S GUIDE TO THE REPORT**

This Reader's Guide provides a basis for understanding and evaluating the data in this report. It explains the kinds of data collected and the terminology needed to understand it.

### **Data Source**

This report presents selected data from 2018 patient-level data submitted by Wisconsin hospitals and FASCs and collected by WHA Information Center, LLC.

The patient-level data submitted include items such as patient characteristics (age, sex, and race), diagnoses, procedures, and charges. Data is derived from billing forms and includes information on each patient served in a hospital or FASC. Patient name is not collected in order to maintain patient confidentiality. Hospitals and FASCs submit patient level data every three months.

### **What You Can Learn From this Report**

The following is a summary of the information presented in this report:

- The report identifies the average charges for selected medical or surgical inpatient and ambulatory treatments. It does not address how much an individual will actually be billed by the facility for that service because each case is different.
- The report does not provide information on physician charges because those data are not collected.
- The report identifies the variation in inpatient and ambulatory charges among facilities. Facility charges vary for many reasons.
- The report identifies trends in inpatient and ambulatory utilization and charges.
- The report provides information about the volume and types of services delivered through Wisconsin hospital emergency departments.

### **Charges vs. Revenues**

The amount a facility bills for a patient's care is known as the charge. The payment a facility actually receives is known as revenue. This report lists the average charges billed by facilities for selected services. These charges are derived from billing forms, which list the actual charges for each patient. However, government health care programs like Medicare and Medical Assistance (Medicaid) generally pay substantially less than the actual charges. In addition, facilities frequently negotiate discounts with insurance companies or other private purchasers of health care services. As a result, the amount actually collected by the facility may differ substantially from the amount billed. In addition, changes in charges from year to year do not necessarily imply that revenues are changing at the same rate.

### **Adjusting the Data for Patient Risk**

Many factors affect how much hospitals charge patients for care. One major factor is patient risk, or the severity of illness of patients served by a facility. Sicker patients tend to stay in the hospital longer, require more intensive care, and use more resources than patients who are less ill. Because these factors affect how much patients are charged, comparing charges among patients with the same illness but different degrees of severity is problematic. However, differences in severity of patient illness can be



estimated, and adjustments can be made that allow better comparisons of charges between patients with varying severity.

In recent years, a number of methods have been developed to measure and adjust for variations in hospital charges caused by illness severity differences in patients. WHA Information Center used a computer software product to risk adjust the inpatient data submitted by hospitals.

The risk adjustment software used for this report looks at the diagnosis and procedure codes, sex, age, and discharge status for each inpatient discharge to determine the base APR-DRG classification, and severity of illness. The severity of illness is then used to compute the risk adjusted charge. The risk adjusted charge is an estimate of what a patient's charges would have been if the patient's severity of illness was the same as the "average" patient's.

For example, if the hospital charge is \$100 and the patient is of "average" risk, then the risk adjusted charge is also \$100. If the charge is \$100 and the patient had a greater than average severity of illness, the risk adjusted charge would be higher than \$100. If the charge is \$100 and the patient had a less than average severity of illness, the risk adjusted charge would be less than \$100.

Once a facility's charges have been risk adjusted, they may be compared to other risk adjusted charges, such as those of another hospital or group of hospitals.

In this report, risk adjusted APR-DRG (All Patient Refined Diagnosis Related Group) charge data is presented for each GMS hospital and the following three comparison groups: analysis area, inpatient volume group, and all GMS hospitals as a single group. Analysis areas group GMS hospital geographically; inpatient volume groups allow comparisons between GMS hospitals of similar size; the "all GMS hospitals" data permit comparison to statewide totals and averages.

The report does not risk adjust charges for psychiatric and alcohol and other drug abuse (AODA) APR-DRGs because difference in charges for these APR-DRGs usually reflect program differences rather than variations in illness severity. For example, one hospital may treat psychiatric patients in longer-term inpatient programs, while another hospital may stabilize similar patients and then transfer them to residential facilities following a short inpatient stay.

### **Why Charges May Differ Between Facilities**

There are many reasons that charges may differ between facilities. Among them are the following:

**Payer mix** – As with other businesses, hospitals cannot survive if costs exceed revenues over a long period of time. Government programs (like Medicare, Medicaid, BadgerCare and General Relief) generally reimburse hospitals at rates that do not cover the costs they incur to provide care. Therefore, facilities that have a relatively high percentage of government-program patients are forced to recover a greater percentage of their operational costs from privately insured and self-pay patients through higher charges.

**Facility cost structures** – Facilities differ in their approach to pricing based on operational costs. Some facilities try to spread the cost of all services and equipment among all patients. Others establish charges for specific services based on the cost to provide each specific service. Furthermore, some facilities may decide, or be forced to provide certain services at a loss while other facility operations subsidize

the losses. Any of these situations can result in significantly different charges among facilities for a given type of service.

**New technology** - The equipment facilities use to provide services differs in age, sophistication, and frequency of use. Facilities with the latest technology may have higher charges than those with older, less sophisticated equipment.

**Staffing costs** - Salary scales may differ by region and are typically higher in urban areas than rural areas. Shortages of nurses and other medical personnel may affect different regions differently. Where shortages are more severe, staffing costs, and therefore charges, may be higher.

**Intensity of care** - Some facilities are equipped to care for more severely ill patients than others. Patients within the same diagnosis or procedure category may need very different levels of service and staff attention, causing variation in charges.

**Range of services provided** - Facilities differ in the range of services they provide to patients. Some may provide the full range of services required for diagnosis and treatment during the stay. Others may stabilize patients and then transfer them to another facility for more specialized or rehabilitative care.

**Service frequency** – The per-patient cost of services is generally higher if the type of service occurs infrequently at the facility. Furthermore, a single case with unusually high or low charges can greatly affect a facility's average charge if the facility reported only a few cases in a given time period.

**Differences in coding** - Facilities vary in their coding methods and personnel, and in the number of billing codes they routinely include on a billing form. This may result in similar types of services being classified differently from facility to facility.

**Capital expenses** - Facilities differ in the amount of debt and depreciation they must cover in their charge structure. A facility with a lot of debt may have higher charges than a facility not facing such expenses. Furthermore, facilities may choose to lease or purchase equipment or facilities. The choices made about financing of capital projects may affect charges in different ways.

## Basic Terms and Concepts

### Statistical Terms

**Distribution** – Distribution is term referring to a set of events, or data. The charges in the following example could be referred to as a distribution. The distribution can be described in many ways, such as the range, which indicates the low and high values in the distribution (in the case below, \$4,984-\$7,002).

**Mean (Average)** – The mean, or average, is the sum of all values in a distribution divided by the number of values in the distribution. For example, to determine the average charge per discharge for seven pneumonia patients at a particular hospital, the charges for each patient are added together and divided by seven. If the charges for the seven patients were \$6,216, \$5,425, \$4,984, \$5,733, \$7,002, \$6,558, and \$5,193, the average charge per discharge would be computed as follows:

$$\begin{array}{r} \$6,216 \\ 5,425 \\ 4,984 \\ 5,733 \\ 7,002 \\ 6,558 \\ \hline + 5,193 \\ \hline \$41,111 \end{array} \qquad \$41,111 / 7 = \$5,873$$

**Median** – The median is the middle value in a distribution when all the values are ranked in order from low to high or high to low. To determine the median charge for the same seven pneumonia patients, the charges are first ranked in order:

\$4,984, \$5,193, \$5,425, **\$5,733**, \$6,216, \$6,558, and \$7,002

The median charge is the middle value: \$5,733

Averages (means) can be significantly affected by a few unusually low or high values (called “outliers”). Since median figures are not affected to such a degree by outliers, they may be more representative of the distribution. Notice if the highest charge for the seven pneumonia patients was \$10,502 instead of \$7,002, the average charge would climb from \$5,873 to \$6,373, but the median charge would remain at \$5,733. In this case the median charge is a better representation of the facility’s charges for pneumonia patients.

**Percentile and percentile distribution** – A percentile marks a point in a distribution above and below which some percentage of the events, or data, fall. For instance, if \$2,000 represents the 25<sup>th</sup> percentile of charges for a certain APR-DRG or ambulatory surgical procedure, it means 25 percent of the patients who were in the APR-DRG or who had the procedure were charged \$2,000 or less. Conversely, 75 percent of the patients were charged \$2,000 or more. The 25<sup>th</sup>, 50<sup>th</sup> (median), and 75<sup>th</sup> percentiles are also referred to as quartiles, because they mark the points in the distribution above and below which lie one-quarter, one-half, and three-quarters of the data in the distribution.

**Standard deviation** – This is a measure of the average variation above or below the mean. When data are in a normal distribution, approximately 68 percent of the values

will fall within one standard deviation of the mean, 95 percent within two standard deviations, and 99.7 percent within three standard deviations.

### **Inpatient Data Terms**

**Analysis areas** – These are groups of counties originally established as health planning districts for federal and state governments. The analysis areas are: Southern (Area 1), Southeastern (Area 2A), Milwaukee County (Area 2B), Lake Winnebago (Area 3), Northeastern (Area 4), West Central (Area 5A), Southwestern (Area 5B), North Central (Area 6), and Western Lake Superior (Area 7).

**Average (mean) charge** – This is the sum of all charges for a service or facility or group of services or facilities divided by the number of discharges for that service or facility. The average charge is an approximation of what an average patient would be charged. The charges listed in these reports do not include fees for physician services.

**Average (mean) length of stay** – This is the total number of days spent in a hospital or group of hospitals by a group of patients divided by the number of discharges. Length of stay affects charges because longer stays generally produce higher charges. In addition, it is a rough indicator of hospital efficiency, assuming similar severity of illness or program philosophy. For example, two hospitals may have significantly different average stays for similar psychiatric diagnoses. These differences may indicate that a facility offers extended inpatient stays, which tend to have higher charges, or alternatives, such as outpatient treatment, which tend to have lower charges. Differences in physician practice patterns can also affect length of stay.

**Discharge** – A patient is discharged once he or she officially leaves the hospital. The number of discharges affects how a hospital is staffed, what types of services it offers, and how well it competes in the broader health care system. To some degree it also affects costs because, when viewed relative to the facility's capacity, the number of discharges is a partial indicator of efficiency. The number of discharges is used to calculate the average charge and average length of stay at a facility. In some cases, transfers of patients between distinct units of a hospital are submitted to WHA Information Center as separate discharges. This reflects standard billing guidelines and data submission requirements developed by the Wisconsin Bureau of Health Information.

**APR-DRG** – The basic unit of analysis for inpatient hospitalizations in this report is the All Patient Refined Diagnosis Related Group, or APR-DRG. It is one method of patient classification. Prior to the 2008 report, DRG (Diagnosis Related Group) was used as the unit of analysis for inpatient hospitalizations. The federal government established DRGs as a way to pay hospitals for care of Medicare patients. The DRG system focused on the resources consumed by patients. APR-DRGs expand the basic DRG structure by adding four subclasses to each DRG and considering the entire patient population, not just Medicare patients. The addition of the four subclasses addresses patient differences relating to severity of illness and risk of mortality. More than a third of the hospitals in the United States are using APR-DRG software to analyze comparative hospital performance.

For this report, WHA Information Center used APR-DRGs to classify all hospital inpatient stays, except those at rehabilitation hospitals. A description of each of the APR-DRGs referenced in this report is included in Chapter IV.

To describe patients at rehabilitation hospitals, WHA Information Center used a classification system developed by the federal Centers for Medicare and Medicaid

Services (formerly the Health Care Financing Administration). This system groups patients into rehabilitation categories (e.g., stroke, spinal cord injury, etc.). Appendix 2 – Methodology and Technical Notes describes in greater detail the methodology used to determine rehabilitation categories.

**External cause codes** – Health care providers and death certificate coders use external cause codes to describe an injury resulting in treatment or death. External cause codes are part of the International Classification of Diseases (ICD-10-CM codes), which are used to describe all diagnoses and some surgical procedures. WHA Information Center collected external cause codes for injury related hospitalizations, emergency department visits and outpatient surgeries in Wisconsin.

**Expected payer** – Data on expected payers are compiled from bills for hospital or FASC services. The bills indicate who the facility expects will pay for the services; however, the expected payer is not always the actual payer. A patient's insurance may not cover the particular procedure. The indicated insurer may not actually cover a patient. Therefore, expected pay sources are to be viewed as preliminary.

Expected pay sources include the following:

*Medicare* – reimbursement under Part A (facility care) of Title XVIII. Medicare is a federal health insurance program for the elderly and disabled.

*Medicaid/BadgerCare* – reimbursement from Wisconsin's Medicaid (Title XIX) and BadgerCare programs. Medicaid is a federal/state program that helps pay for health care for indigent and other eligible persons. BadgerCare provides Medicaid benefits to certain persons whose income would otherwise disqualify them from Medicaid eligibility.

*Other Government* – reimbursement from Tri-Care (formerly known as CHAMPUS, Civilian Health and Medical Program of the Uniformed Services – health benefits for military personnel and dependents), county general relief, county 51.42/51.437 programs, and other government sources. Reimbursement from Medicaid programs in other states is also included.

*Commercial or Private Insurance* – reimbursement from Blue Cross/Blue Shield and other traditional insurance companies, alternative payment systems (e.g., HMOs, PPOs), self-funded plans, and Worker's Compensation.

*Self-Pay* – reimbursement from a patient's own resources. Self-Pay may also include insurance that has not been assigned (i.e., reimbursement is made by the insurer directly to the patient, rather than to the facility).

*Unknown* – the facility had not yet determined from whom it expected reimbursement.

For more information regarding Payer Code Assignment, please refer to Appendix 2 – Methodology and Technical Notes.

**Hospital Types** – There are six types of hospitals providing services in Wisconsin:

*Alcohol and other drug abuse (AODA) hospitals* – provide diagnostic and therapeutic services to patients with drug or alcohol dependencies.

*General medical-surgical (GMS) hospitals* – provide diagnostic and therapeutic services to patients for a variety of medical conditions, both surgical and non-surgical.

*Long-Term Acute Care (LTAC) hospitals* – focus on patients who, on average, stay more than 25 days. They specialize in treating patients who may have more than one serious condition, but who may improve with time and care, and return home.

*Psychiatric hospitals* – provide diagnostic and therapeutic services to patients with mental, emotional, or developmental disorders.

*Rehabilitation hospitals* – provide a comprehensive array of restoration services for the disabled and support services necessary to help patients attain their maximum functioning.

*State-operated mental health institutes* – provide comprehensive and intensive diagnostic, therapeutic, and support services to patients with unusually complex or difficult mental, emotional, or developmental disorders.

**ICD-10-CM codes** –The tenth version of a coding scheme (International Classification of Diseases-Clinical Modification) used by health care providers and third-party payers to classify diagnoses and procedures.

**Inpatient volume groups** – A system for classifying hospitals based on the total number of discharges, adjusted yearly to account for patient mix. The number of patients within each APR-DRG at a hospital was multiplied by the statewide average charge for that APR-DRG. These adjusted charges were then totaled for each hospital, and the hospitals were ranked from lowest to highest adjusted total charges. Based on these data, six inpatient volume groups for GMS hospitals were created: the smallest, Volume Group 1, to the largest, Volume Group 6. All specialty hospitals were placed in a group by themselves (Inpatient Volume Group 7).

**MDC** – A broad grouping, or Major Diagnostic Category, of APR-DRGs according to type of disease, condition or body part treated.

**Median charge and median length of stay** – Charges and lengths of stay may also be presented as medians. The median charge is the midpoint between the highest charge and the lowest charge. The median length of stay is expressed as a number of days. Half the patients stayed in the hospital longer than the median length of stay, and half stayed a shorter period of time.

**Newborn** – A discharge reported in the range of ICD-10-CM codes Z381 through Z389 under *Principal Diagnosis*. The term refers to a baby born in a hospital or admitted on the day of its birth.

**Racial distribution** – Data on the racial background self-reported by patients. Racial groups appearing in this report include American Indian/Alaskan Native, Asian, Black/African American, Native Hawaiian/Pacific Islander, White, Multiracial, Declined, and Unavailable. Patients are not required by facilities to identify their racial background. The data are based solely on how patients classify themselves.

**Risk adjusted rate** – A modification of the unadjusted rate that takes into account a hospital's case-mix severity. It can be thought of as the rate that would be expected if the hospital had an "average" case mix. Generally, risk adjusted rates lower than the unadjusted rate suggests that case mix severity is greater than average. A risk adjusted rate higher than the unadjusted rate suggests that the case mix is less severe than average.

**Risk adjustment** – Also known as **severity adjustment**, the modification of hospital data to account for differences in the severity of illness of patients. By adjusting for variation caused by differences in patient risk or severity of illness, more valid comparisons of data (e.g., charges) can be made between hospitals.

**Severity adjustment** – see risk adjustment, risk adjusted rate

**Specialty hospital** – A hospital other than a GMS hospital that provides services to patients with specified medical conditions or for special categories of patients. In Wisconsin, this includes long-term acute care (LTAC), psychiatric, alcohol and other drug abuse (AODA), and rehabilitation hospitals, as well as the state-operated mental health institutes. Specialty hospitals were placed in a group by themselves (Inpatient Volume Group 7).

### **Ambulatory Surgery Data Terms**

**Ambulatory surgery** – Also called outpatient surgery, ambulatory surgery refers to surgical procedures for which patients require less than a 24-hour stay. For purposes of this report, certain invasive diagnostic procedures are reported as ambulatory surgeries.

Patients undergoing ambulatory surgery are not necessarily comparable to those undergoing the same procedure on an inpatient basis. An inpatient may have greater severity of illness than an outpatient or may have additional, more complicated procedures performed at the same time. Physicians may differ regarding the choice of an inpatient versus an outpatient setting for surgery on the same type of patient.

However, there is probably little difference between the patients treated in hospital-based ambulatory surgery units and freestanding ambulatory centers (FASCs). FASCs tend to be located in urban areas and compete with hospitals for patients.

**Average (mean) charge** – see definition under **Inpatient Data Terms**

**Case** – Defined as one patient visit, even though more than one procedure may be performed during the same surgical episode. For instance, if a myringotomy (incision in the middle ear) is performed on each ear during one visit, only one case will be counted, even though two procedures are performed.

**CPT-4<sup>2</sup> codes** – A coding scheme (Physicians' Current Procedural Terminology) developed by the American Medical Association to classify procedures performed in an ambulatory setting.

**Freestanding ambulatory surgery center (FASC)** – A facility dedicated solely to the provision of surgery on an outpatient basis. FASCs are owned and operated independently of a hospital. WHA Information Center collects data only from FASCs certified to treat Medicare patients, although these facilities typically treat many patients whose services are reimbursed by a variety of third-party payers. The FASC data include data related to all patients who underwent ambulatory surgery, regardless of payer type.

**Hospital-based outpatient surgery unit** – A section of a hospital that provides ambulatory surgery. Such units may be part of a hospital campus or in separate buildings. They are owned and controlled by the parent hospital facility.

**ICD-10-CM codes** – see definition under **Inpatient Data Terms**

**Median charge** – see definition under **Inpatient Data Terms**

**Number (#) of cases** – The number of cases at the facility for which the CPT-4 code was listed as the principal procedure.

**Percentile charges** – Mark the point above and below which some percentage of the patients' charges fall. For instance, half the patients were charged less than the 50<sup>th</sup> percentile, or median charge, and half were charged more. Similarly, 95 percent were charged less than the 95<sup>th</sup> percentile, and 5 percent were charged more.

**Procedure** – A surgical operation performed on a person during a patient visit, as identified by the CPT-4 procedure codes. A person may undergo more than one procedure during a single surgical operation. For example, a patient who had arthroscopy with tendon repair on one leg undergoes two separate procedures.

**Standard deviation** – A measure of the average variation above and below the average, or mean, charge. When charges are in a normal distribution, approximately 68 percent of the cases will fall within one standard deviation of the mean, 95 percent within two standard deviations, and 99.7 percent within three standard deviations.

**Three-digit ZIP code area** – Used for geographic comparisons of ambulatory surgery utilization and charge data. Each area contains all facilities whose ZIP code begins with the same three digits (e.g., 530, 537). Refer to the map in Appendix 3 for the three-digit ZIP code area boundaries.

### **Emergency Department Data Terms**

**External cause code** – see definition under **Inpatient Data Terms**

**Visit rate** – The number of visits per 100 or 100,000 population. The rate is calculated by dividing the total number of visits in a particular age, sex, or diagnosis category by the U.S. Census Bureau's 2018 population estimate for that age, sex, analysis area or statewide total, then multiplying the result by 100 or 100,000, as applicable.



## CHAPTER I. OVERVIEW OF HOSPITAL INPATIENT UTILIZATION AND CHARGES

Since Wisconsin hospitals began publicly reporting inpatient data in 1989, the average length of stay at GMS hospitals declined until 2008. Between 1999 and 2007 the average length of stay decreased from 4.4 days to 4.0 days. From 2008 thru 2018, the average length of stay has varied between 4.0 and 4.2 days. The upward trend in average charges at GMS hospitals continued, with average charges rising from \$35,823 in 2017 to \$37,738 in 2018. It is important to recognize, however, that since hospitals do not collect their total charges, actual hospital revenues have increased at a much slower rate.

The average charge per stay at the AODA hospital increased 14.3 percent from 2017 to 2018. The number of hospitalizations decreased 29.2 percent, patient days decreased 19.3 percent, and average length of stay increased 14.0 percent.

The average charge per stay at LTAC hospitals decreased 1.2 percent from 2017 to 2018. The number of hospitalizations increased 1.0 percent, patient days increased 3.1 percent, and average length of stay decreased 1.2 percent.

The average charge per stay at psychiatric hospitals decreased 1.3 percent from 2017 to 2018. The number of hospitalizations increased 4.2 percent, patient days increased 5.8 percent, and average length of stay increased 1.6 percent.

The average charge per stay at rehabilitation facilities increased 0.1 percent from 2017 to 2018. The number of hospitalizations increased 1.6 percent, patient days decreased 5.2 percent, and average length of stay decreased 6.7 percent.

The average charge per stay at the state-operated mental health institutes increased 6.9 percent from 2017 to 2018. The number of hospitalizations decreased 6.1 percent, patient days increased 1.1 percent, and average length of stay increased 7.7 percent.

**Note:** In this report, the terms *hospitalization* and *discharge* are used interchangeably.

	<b>2018</b>	<b>2017</b>	<b>% Difference</b>
Number of Hospitalizations	593,020	602,083	-1.5%
Total Patient Days	2,712,639	2,695,397	0.6%
Average Stay (days)	4.6	4.5	2.2%
Hospitalizations per 1,000 population	102.0	103.9	-1.8%
Patient Days per 1,000 population	466.7	465.1	0.3%
Total Charges	\$22,066,968,370	\$21,331,149,334	3.4%
Average Charge per Hospitalization	\$37,211	\$35,429	5.0%

Note: Except for the state-operated mental health institutes, hospitalizations with lengths of stay greater than 100 days were not included when computing the charge data above. These hospitalizations were included to compute the number of hospitalizations, patient days, average length of stay, and population-based rates. All hospitalizations of more than 999 days were excluded entirely from the data. During 2018 there were 35 such hospitalizations. Lengths of stay for inpatients who remained in the hospital less than 24 hours were counted as one-day stays.

Source: Inpatient Data, WHA Information Center, LLC.

**Table 2. Summary data for Wisconsin hospitals, by type, 2018**

Type	Number of Hospitals	Number of Hospitalizations	Patient Days	Average Stay (days)	Average Charge per Day	Average Charge per Stay
AODA	1	92	1,422	15.5	\$1,863	\$28,788
GMS	130	561,444	2,365,887	4.2	\$8,955	\$37,738
LTAC	6	2,019	62,257	30.8	\$4,931	\$152,047
PSYCH	12	23,447	151,153	6.4	\$2,418	\$15,590
REHAB	3	2,152	28,470	13.2	\$3,299	\$43,639
STATE	2	3,866	103,450	26.8	\$1,066	\$28,531
<b>TOTAL</b>	<b>154</b>	<b>593,020</b>	<b>2,712,639</b>	<b>4.6</b>	<b>\$8,135</b>	<b>\$37,211</b>

Note: Except for the state-operated mental health institutes, hospitalizations with lengths of stay greater than 100 days were not included when computing the charge data above. These hospitalizations were included to compute the number of hospitalizations, patient days, average length of stay, and population-based rates. All hospitalizations of more than 999 days were excluded entirely from the data. During 2018 there were 35 such hospitalizations. Lengths of stay for inpatients who remained in the hospital less than 24 hours were counted as one-day stays.

Source: Inpatient Data, WHA Information Center, LLC.

**Table 3. Percent change in utilization and charges in Wisconsin hospitals, by type, 2017 to 2018**

Type	Number of Hospitalizations	Patient Days	Average Length of Stay	Average Charge per Stay
AODA	-29.2%	-19.3%	14.0%	14.3%
GMS	-1.7%	0.3%	1.9%	5.3%
LTAC	1.0%	3.1%	2.1%	-1.2%
PSYCH	4.2%	5.8%	1.6%	-1.3%
REHAB	1.6%	-5.2%	-6.7%	0.1%
STATE	-6.1%	1.1%	7.7%	6.9%
<b>TOTAL</b>	<b>-1.5%</b>	<b>0.6%</b>	<b>2.2%</b>	<b>5.0%</b>

Note: Except for the state-operated mental health institutes, hospitalizations with lengths of stay greater than 100 days were not included when computing the charge data above. These hospitalizations were included to compute the number of hospitalizations, patient days, average length of stay, and population-based rates. All hospitalizations of more than 999 days were excluded entirely from the data. During 2018 there were 35 such hospitalizations. Lengths of stay for inpatients who remained in the hospital less than 24 hours were counted as one-day stays.

Source: Inpatient Data, WHA Information Center, LLC.

## **CHAPTER II. SERVICES PROVIDED TO INPATIENTS**

This chapter has two sections. The first presents statewide information on six broad categories of hospitalizations: obstetrical, neonatal, cardiovascular, orthopedic, psychiatric, and alcohol and other drug abuse (AODA). Data reported include the number of hospitalizations, the average length of stay, the average charge, and the median charge per hospitalization.

The second section reviews the ten most common reasons for hospitalization, the top ten types of hospitalizations by average charge, and the ten types of hospitalizations that generated the greatest total charges. Three tables are presented, again containing the number of hospitalizations, the average length of stay, the average charge, and the median charge per hospitalization, or total charges.

This chapter's analysis is restricted to GMS, LTAC, psychiatric, and AODA facilities. Patients in these facilities accounted for 99.0 percent of all Wisconsin hospitalizations in 2018.

Patients in the state-operated mental health institutes and the rehabilitation hospitals are excluded because of their atypical characteristics (unusually long lengths of stay and high charges). Additional data on these specialty facilities are available upon request.

Patient hospitalizations are defined in terms of major diagnostic categories (MDCs) and All Patient Refined Diagnosis Related Groups (APR-DRGs). APR-DRGs are a method of classifying hospital stays according to the diagnosis of the patient, the procedures performed, and other factors, such as age and the presence of complications or comorbidities (other conditions that affect the amount of care required by a patient). MDCs are broad groupings of APR-DRGs. The APR-DRG system is widely used in many kinds of health data analysis. This report uses APR-DRGs as a way to compare similar patients.

## Section 1: Hospitalization Categories

### Birth-Related Hospitalizations: The Mothers

In 2018, 59,272 women delivered babies (single and multiple births) in Wisconsin hospitals, down from 61,683 in 2017.

Most childbirths (68.7 percent) were normal and uncomplicated (APR-DRG 560). The remaining vaginal deliveries, including those with complicating diagnoses or concurrent procedures, such as sterilization (APR-DRGs 541 and 542), represented 6.2 percent of childbirths.

Statewide, the rate for Cesarean sections, also called C-sections (APR-DRG 540) increased slightly to 26.8 percent of childbirths, from 26.4 percent the year before.

Differences in C-section rates by hospital are often studied because they reflect individual physician practices, socioeconomic factors, access to and availability of prenatal care, and other factors. Hospitals with few childbirths may have higher C-section rates simply because small changes in the number of C-sections affect rates more when the number of childbirths is small than when it is large. However, hospitals with many childbirths may also have high C-section rates because they have programs aimed at treating high-risk pregnancies. Therefore, a C-section rate by itself is not an indicator of hospital quality or performance but may highlight an area for further review.

Among hospitals with more than 500 obstetric cases, ThedaCare Regional Medical Center, Neenah, had the highest C-section rate at 35.3 percent of all childbirths, Aurora Medical Center, Kenosha, had a rate of 33.8 percent, and Aurora Medical Center, Oshkosh, had a rate of 33.2 percent.

**Table 4. Childbirths in Wisconsin, 2018**

APR-DRG	Description	Number of Hospitalizations	Average Stay (days)	Average Charge	Median Charge
540	Cesarean Delivery	15,879	3.6	\$23,359	\$20,711
541	Vaginal Delivery with Sterilization	1,603	2.4	\$19,381	\$16,998
542	Vaginal Delivery with Proc Except Sterilization	1,097	2.5	\$14,801	\$13,182
560	Vaginal Delivery	40,693	2.2	\$11,569	\$10,537
	Total Childbirths	59,272	2.6	\$14,998	\$12,665

Note: Data exclude hospitalizations at rehabilitation facilities and state-operated mental health institutes.  
Source: Inpatient Data, WHA Information Center, LLC.

## Birth-Related Hospitalizations: The Babies

Obstetric hospitalizations refer to the delivering mothers. The inpatient stays of newborn babies are referred to as neonatal hospitalizations. They include newborns and other neonates with conditions originating in the perinatal period.

Neonatal hospitalizations in GMS facilities decreased to 62,321 in 2018 from 64,857 in 2017.

<b>APR-DRG</b>	<b>Description</b>	<b>Number of Hospitalizations</b>	<b>Average Stay (days)</b>	<b>Average Charge</b>	<b>Median Charge</b>
580	Neonate, Transferred <5 Days Old, Not Born Here	147	1.3	\$9,824	\$8,702
581	Neonate, Transferred <5 Days Old, Born Here	1,566	1.2	\$4,386	\$2,418
583	Neonate with External Heart and Lung Oxygen Support	9	93.3	\$1,548,038	\$828,869
588	Neonate Birthwt <1500g with Major Procedure	27	103.4	\$929,161	\$699,003
589	Neonate Birthwt <500g or Gestational Age <24 weeks	94	29.1	\$224,992	\$4,079
591	Neonate Birthwt 500-749g without Major Procedure	63	76.4	\$539,702	\$528,078
593	Neonate Birthwt 750-999g without Major Procedure	111	73.3	\$465,660	\$435,373
602	Neonate Birthwt 1000-1249g with Respiratory Distress Syndrome	117	59.5	\$342,407	\$322,385
603	Other Neonate Birthwt 1000-1249g	12	36.3	\$158,167	\$151,090
607	Neonate Birthwt 1250-1499g with Respiratory Distress Syndrome	149	45.7	\$214,833	\$197,405
608	Other Neonate Birthwt 1250-1499g	38	28.6	\$119,274	\$113,169
609	Neonate Birthwt 1500-2499g with Major Procedure	22	78.5	\$865,370	\$418,773
611	Neonate Birthwt 1500-1999g with Major Anomaly	73	34.4	\$200,029	\$155,281
612	Neonate Birthwt 1500-1999g with Respiratory Distress Syndrome	304	29.9	\$144,208	\$129,999
613	Neonate Birthwt 1500-1999g with Congenital Or Perinatal Infections	6	17.3	\$55,115	\$40,612
614	Other Neonate Birthwt 1500-1999g	448	16.2	\$64,315	\$52,292
621	Neonate Birthwt 2000-2499g with Major Anomaly	91	17.8	\$102,803	\$73,559
622	Neonate Birthwt 2000-2499g with Respiratory Distress Syndrome	299	17.8	\$90,498	\$74,978
623	Neonate Birthwt 2000-2499g with Congenital Or Perinatal Infections	10	13.4	\$73,435	\$70,733
625	Neonate Birthwt 2000-2499g with Other Significant Condition	284	13.2	\$50,698	\$43,496
626	Normal Newborn Birthweight 2000g - 2499g	1,412	4.9	\$15,307	\$5,834
630	Neonate Birthwt >2499g with Major Cardiovascular Procedure	50	53.1	\$658,750	\$381,183
631	Neonate Birthwt >2499g with Other Major Procedure	74	28.7	\$271,302	\$173,800
633	Neonate Birthwt >2499g with Major Anomaly	722	9.0	\$64,020	\$11,346
634	Neonate Birthwt >2499g with Respiratory Distress Syndrome	977	10.2	\$59,848	\$38,817
636	Neonate Birthwt >2499g with Congenital or Perinatal Infections	136	7.2	\$30,909	\$19,058
639	Neonate Birthwt >2499g with Other Significant Condition	1,167	8.8	\$32,672	\$17,849
640	Normal Newborn, Birthweight 2500g+	53,913	2.1	\$4,419	\$3,743
<b>Total Neonatal Hospitalizations</b>		<b>62,321</b>	<b>3.6</b>	<b>\$13,651</b>	<b>\$3,905</b>

Note: Includes newborns in the hospital of birth, newborns transferred to other hospitals, and low-birthweight infants readmitted when less than 28 days old after their initial hospital stay. Data exclude hospitalizations at rehabilitation facilities and state-operated mental health institutes.

## **Cardiovascular Hospitalizations**

In 2018, cardiovascular diagnoses accounted for 70,213 hospitalizations (down from 70,491 in 2017) (not including patients treated at rehabilitation hospitals or state-operated mental health institutes). These patients represented 11.8 percent of all hospitalizations and 19.0 percent of all inpatient charges, compared to 11.7 percent and 18.8 percent, respectively, the year before. Charges for cardiovascular-related hospitalizations in 2018 totaled \$4.2 billion, up from \$4.0 billion the previous year.

Forty-two GMS hospitals (one less than 2017) performed open-heart surgery (APR-DRGs 162-163, and 165-167) on 5,239 patients, a 17.6 percent decrease from 2017.

The largest number of open-heart surgeries (933) was performed by Aurora St. Luke's Medical Center in Milwaukee.

Four hospitals performed a total of 57 heart transplants in 2018. These four urban teaching hospitals performed all of the heart transplants in 2018. Aurora St. Luke's Medical Center, Milwaukee, performed 27 transplants, University of Wisconsin Hospital and Clinics, Madison, performed 13, Froedtert Memorial Lutheran Hospital, Milwaukee performed 11, and Children's Hospital of Wisconsin, Milwaukee, performed 6.

**Table 6. Cardiovascular Hospitalizations (MDC 05) in Wisconsin, 2018**

APR-DRG	Description	Number of Hospitalizations	Average Stay (days)	Average Charge	Median Charge
002	Heart Transplant	57	51.9	\$1,237,679	\$731,757
161	Defibrillator and Heart Assist Implant	786	10.4	\$260,326	\$161,225
162	Cardiac valve procedures w AMI or complex PDX	199	12.6	\$243,559	\$219,167
163	Cardiac valve procedures w/o AMI or complex PDX	1,488	7.2	\$159,980	\$141,286
165	Coronary bypass w AMI or complex PDX	1,018	9.6	\$164,601	\$147,521
166	Coronary bypass w/o AMI or complex PDX	2,054	6.8	\$132,040	\$118,733
167	Other cardiothoracic & thoracic vascular procedures	480	5.7	\$141,561	\$117,205
170	Pacemaker Implant with Heart Attack, Heart Failure or Shock	31	8.0	\$106,736	\$107,406
171	Pacemaker Implant without Heart Attack, Heart Failure or Shock	1,697	3.7	\$61,897	\$53,172
174	Percutaneous coronary intervention w AMI	5,573	3.0	\$71,534	\$62,741
175	Percutaneous coronary intervention w/o AMI	4,264	3.2	\$102,344	\$85,401
176	Pacemaker/Defibrillator Replacement	145	5.2	\$111,826	\$99,754
177	Pacemaker/Defibrillator Revision Except Replacement	86	4.1	\$56,856	\$39,787
190	Circulatory Disorders with Heart Attack	4,033	3.4	\$33,530	\$26,961
191	Cardiac catheterization for coronary artery disease	990	2.2	\$33,812	\$29,564
192	Cardiac catheterization for other non-coronary conditions	3,661	4.6	\$53,118	\$39,343
194	Heart Failure	18,070	4.5	\$27,546	\$21,372
196	Cardiac arrest & shock	403	3.5	\$45,294	\$30,418
198	Chest Pain with Angina Pectoris or Coronary Atherosclerosis	1,205	2.0	\$18,373	\$15,906
199	Hypertension	1,845	2.8	\$23,660	\$19,296
200	Heart Structural and Valve Disorders	221	4.2	\$29,602	\$18,540
201	Heart Abnormal Rhythm and Conduction Disorders	8,819	2.9	\$20,781	\$16,090
203	Chest Pain	604	1.8	\$18,075	\$16,454
204	Fainting and Collapse	1,638	2.8	\$22,946	\$19,143
206	Malfunction/ Reaction/Complication of Heart Device or Procedure	663	5.7	\$47,745	\$30,387
	All Other Cardiovascular Hospitalizations	10,183	6.1	\$93,168	\$58,711
	Total Cardiovascular Hospitalizations	70,213	4.4	\$59,769	\$33,391

Note: Data exclude hospitalizations at rehabilitation facilities and state-operated mental health institutes.

Source: Inpatient Data, WHA Information Center, LLC.



## Orthopedic Hospitalizations

Diseases and injuries related to muscles and the skeletal system resulted in 62,747 hospitalizations in 2018 (not including patients treated at rehabilitation hospitals or state-operated mental health institutes). Orthopedic patients accounted for 10.6 percent of all hospitalizations and 15.1 percent of total inpatient charges.

Knee Joint Replacement (APR-DRG 302) was the sixth-most frequent reason for hospitalization statewide and generated the second highest charges of any APR-DRG in 2018. Hip Joint Replacement (APR-DRG 301) was the eighth-most frequent reason for hospitalization statewide and generated the third-highest total charges of all APR-DRGs. (See Tables 10 and 12).

<b>APR-DRG</b>	<b>Description</b>	<b>Number of Hospitalizations</b>	<b>Average Stay (days)</b>	<b>Average Charge</b>	<b>Median Charge</b>
301	Hip Replacement	13,831	2.3	\$50,473	\$45,466
302	Knee Replacement	14,993	2.0	\$47,664	\$43,808
303	Dorsal and Lumbar Fusion with Principal Diagnosis of Back Curvature	261	4.8	\$152,818	\$125,241
304	Dorsal and Lumbar Fusion Without Principal Diagnosis of Back Curvature	3,901	3.4	\$100,098	\$84,183
305	Amputation of Lower Limb Except Toes	1,171	9.2	\$77,479	\$55,122
308	Hip & femur fracture repair	4,352	4.9	\$53,064	\$46,101
309	Other significant hip & femur surgery	745	5.8	\$76,099	\$58,565
310	Back/Neck Procedures Except Dorsal and Lumbar Fusion	918	3.3	\$47,327	\$39,140
313	Other Knee/Lower Leg Surgery	2,695	4.4	\$59,545	\$47,382
314	Foot/Toe Surgery	1,270	6.5	\$55,831	\$41,582
315	Shoulder, upper arm & forearm procedures except joint replacement	2,262	2.5	\$57,494	\$51,724
316	Hand/Wrist Surgery	363	3.3	\$38,191	\$29,513
321	Upper Spinal Fusion	1,870	3.3	\$74,527	\$62,274
340	Thigh Fracture	671	3.5	\$18,950	\$15,289
341	Pelvis Fracture/Hip Dislocation	569	3.6	\$20,712	\$17,180
342	Fracture or Dislocation Except Thigh, Pelvis, Back	1,106	3.8	\$24,030	\$19,844
343	Musculoskeletal Malignancy	479	5.9	\$47,087	\$36,212
347	Other Back/Neck Disorders, Fractures, Injuries	2,791	4.3	\$27,919	\$21,878
351	Other Musculoskeletal System and Connective Tissue Diagnoses	2,474	3.9	\$24,965	\$18,834
	All Other Orthopedic Hospitalizations	6,025	5.4	\$57,916	\$42,300
	<b>Total Orthopedic Hospitalizations</b>	<b>62,747</b>	<b>3.4</b>	<b>\$53,259</b>	<b>\$44,437</b>

Note: Data exclude hospitalizations at rehabilitation facilities and state-operated mental health institutes.  
Source: Inpatient Data, WHA Information Center, LLC.



## Psychiatric Hospitalizations

GMS, and psychiatric hospitals treated 37,438 psychiatric inpatients in 2018 (up from 37,154 in 2017). They represented 6.2 percent of all hospitalizations and 2.7 percent of total inpatient charges.

The number of psychiatric hospitalizations increased by 0.8 percent from 2017, and patient days increased by 0.7 percent.

The average charge for psychiatric hospitalizations decreased by 1.8 percent in 2018 to \$15,811, from \$16,100 the year before.

<b>APR-DRG</b>	<b>Description</b>	<b>Number of Hospitalizations</b>	<b>Average Stay (days)</b>	<b>Average Charge</b>	<b>Median Charge</b>
740	Mental Illness Diagnosis with O.R. Procedure	53	7.0	\$52,779	\$38,734
750	Schizophrenia	4,547	9.6	\$20,216	\$14,127
751	Psychoses	14,558	5.6	\$14,588	\$12,144
752	Personality and Impulse Control Disorders	511	4.3	\$11,101	\$9,118
753	Bipolar Disorders	8,730	6.0	\$15,032	\$12,643
754	Depression	3,780	4.2	\$11,027	\$8,947
755	Neuroses Other Than Depression	1,687	4.2	\$11,267	\$8,040
756	Acute Adjust React Psychosocial Dysfunction	1,476	4.2	\$16,383	\$12,465
757	Organic Disturbances and Mental Retardation	599	9.0	\$28,040	\$18,114
758	Behavioral disorders	664	6.1	\$16,503	\$15,506
759	Eating Disorders	421	14.8	\$49,366	\$38,571
760	Other Mental Disorders	412	11.1	\$35,293	\$21,637
<b>Total Psychiatric Hospitalizations</b>		<b>37,438</b>	<b>6.1</b>	<b>\$15,811</b>	<b>\$12,189</b>

Note: Data exclude hospitalizations at rehabilitation facilities and state-operated mental health institutes.

Source: Inpatient Data, WHA Information Center, LLC.

## AODA Hospitalizations

Inpatient treatment of alcohol and other chemical dependencies accounted for 14,463 hospitalizations in 2018 in GMS, psychiatric, and AODA facilities, down from 15,694 in 2017. The state's only dedicated AODA hospital, Libertas Center in Green Bay, treated 92 inpatients in 2018, a 29.2 percent decrease from its 2017 total of 130. The average charge at Libertas Center increased 14.3 percent, to \$28,788 from \$25,179 in 2017, while the average length of stay increased 14.0 percent, to 15.5 days from 13.6 days.

<b>APR-DRG</b>	<b>Description</b>	<b>Number of Hospitalizations</b>	<b>Average Stay (days)</b>	<b>Average Charge</b>	<b>Median Charge</b>
770	Substance Abuse/Dependence, Left Against Medical Advice	1,113	2.0	\$9,992	\$7,102
772	Substance Abuse/Dependence with Rehab and/or Detox	300	5.9	\$14,422	\$9,320
773	Opioid Abuse/Dependence	3,175	3.8	\$12,925	\$12,424
774	Cocaine Abuse/Dependence	656	3.6	\$13,302	\$10,395
775	Alcohol Abuse/Dependence	8,622	3.7	\$15,879	\$11,481
776	Other Substance Abuse/Dependence	562	4.3	\$12,322	\$9,534
	All Other AODA Hospitalizations	35	8.6	\$84,588	\$49,541
	<b>Total AODA Hospitalizations</b>	<b>14,463</b>	<b>3.7</b>	<b>\$14,658</b>	<b>\$11,048</b>

Note: Data exclude hospitalizations at rehabilitation facilities and state-operated mental health institutes.

Source: Inpatient Data, WHA Information Center, LLC.

## Section 2: Reasons for Hospitalization: Most Frequently Occurring, Highest Average Charges and Highest Total Charges

### Most Frequently Occurring APR-DRGs

The ten most frequently occurring APR-DRGs (see Table 10) accounted for 37.0 percent of all hospitalizations and 21.8 percent of all inpatient charges at GMS, LTAC, psychiatric and AODA facilities in 2018.

Birth-related hospitalizations (APR-DRGs 540, 541, 542, and 560 and MDC 15) accounted for 20.7 percent of all hospitalizations at these facilities, but only 7.8 percent of charges.

The average hospital stays for patients with the most frequently reported APR-DRGs were relatively short (4.5 days or less for all but two APR-DRGs). Average charges were also relatively low for the most common APR-DRGs (\$22,034) compared to the average charge for all inpatients at GMS, LTAC, psychiatric, and AODA facilities (\$37,876).

<b>APR-DRG</b>	<b>Description</b>	<b>Number of Hospitalizations</b>	<b>Average Stay (days)</b>	<b>Average Charge</b>	<b>Median Charge</b>
640	Normal Newborn, Birthweight 2500g+	53,913	2.1	\$4,419	\$3,743
560	Vaginal Delivery	40,693	2.2	\$11,569	\$10,537
720	Blood Infection/Septicemia	27,146	5.6	\$43,109	\$28,620
194	Heart Failure	18,070	4.5	\$27,546	\$21,372
540	Cesarean Delivery	15,879	3.6	\$23,359	\$20,711
302	Knee Replacement	14,993	2.0	\$47,664	\$43,808
751	Psychoses	14,558	5.6	\$14,588	\$12,144
301	Hip Replacement	13,831	2.3	\$50,473	\$45,466
139	Pneumonia	11,578	3.9	\$24,161	\$18,937
201	Heart Abnormal Rhythm and Conduction Disorders	8,819	2.9	\$20,781	\$16,090
<b>Above Hospitalizations Total</b>		<b>219,480</b>	<b>3.2</b>	<b>\$22,034</b>	<b>\$13,879</b>

Note: Data exclude hospitalizations at rehabilitation facilities and state-operated mental health institutes.

Source: Inpatient Data, WHA Information Center, LLC.

## Highest Average Charges

The top ten APR-DRGs in 2018 based on the average charge accounted for only 0.2 percent of all hospitalizations but 2.9 percent of total inpatient charges among GMS, LTAC, psychiatric, and AODA hospitals in 2018 (see Table 11).

These APR-DRGs required specialized treatment and long hospital stays. Together, they represented only 960 hospitalizations.

<b>APR-DRG</b>	<b>Description</b>	<b>Number of Hospitalizations</b>	<b>Average Stay (days)</b>	<b>Average Charge</b>	<b>Median Charge</b>
583	Neonate with External Heart and Lung Oxygen Support	9	93.3	\$1,548,038	\$828,869
002	Heart and/or Lung Transplant	92	45.5	\$1,119,980	\$726,668
588	Neonate Birthwt <1500g with Major Procedure	27	103.4	\$929,161	\$699,003
609	Neonate Birthwt 1500-2499g with Major Procedure	22	78.5	\$865,370	\$418,773
001	Liver Transplant	149	25.8	\$684,416	\$451,242
009	Extracorporeal membrane oxygenation (ECMO)	109	22.2	\$674,802	\$457,959
630	Neonate Birthwt >2499g with Major Cardiovascular Procedure	50	53.1	\$658,750	\$381,183
004	Tracheostomy w MV 96+ hours w extensive procedure	424	39.1	\$558,130	\$432,188
591	Neonate Birthwt 500-749g without Major Procedure	63	76.4	\$539,702	\$528,078
841	Burns, 3rd Degree with Skin Graft	15	39.9	\$476,655	\$420,652
Above Hospitalizations Total		960	42.1	\$674,337	\$465,932

Note: Data exclude hospitalizations at rehabilitation facilities and state-operated mental health institutes.

Source: Inpatient Data, WHA Information Center, LLC.

## Highest Total Charges

The ten APR-DRGs that generated the highest total charges accounted for 24.9 percent of all hospitalizations and 24.9 percent of total charges among GMS, LTAC, psychiatric, and AODA hospitals in 2018 (see Table 12). They included a mixture of high-cost conditions (e.g., Infectious and parasitic diseases), high-volume APR-DRGs (e.g., Vaginal Delivery), and APR-DRGs that were relatively high both in volume and charges (e.g., Blood Infection/Septicemia, Knee Replacement, and Hip Replacement).

<b>APR-DRG</b>	<b>Description</b>	<b>Number of Hospitalizations</b>	<b>Average Stay (days)</b>	<b>Average Charge</b>	<b>Total Charges</b>
720	Blood Infection/Septicemia	27,146	5.6	\$43,109	\$1,170,244,736
302	Knee Replacement	14,993	2.0	\$47,664	\$714,630,958
301	Hip Replacement	13,831	2.3	\$50,473	\$698,097,195
194	Heart Failure	18,070	4.5	\$27,546	\$497,759,273
560	Vaginal Delivery	40,693	2.2	\$11,569	\$470,761,963
175	Percutaneous coronary intervention w/o AMI	4,264	3.2	\$102,344	\$436,393,815
174	Percutaneous coronary intervention w AMI	5,573	3.0	\$71,534	\$398,659,231
710	Infectious & parasitic diseases including HIV w O.R. procedure	3,135	12.4	\$126,898	\$397,825,753
304	Dorsal and Lumbar Fusion Without Principal Diagnosis of Back Curvature	3,901	3.4	\$100,098	\$390,483,195
540	Cesarean Delivery	15,879	3.6	\$23,359	\$370,920,660
<b>Above Hospitalizations Total</b>		<b>147,485</b>	<b>3.5</b>	<b>\$37,602</b>	

Note: Data exclude hospitalizations at rehabilitation facilities and state-operated mental health institutes.



### CHAPTER III. INJURY-RELATED HOSPITALIZATIONS AND AMBULATORY SURGERIES (External Cause Codes)

External cause codes are part of the International Classification of Diseases (ICD-10-CM) system that all hospitals and death certificate coders use for the disease or injury resulting in hospitalization or death. External cause codes are required to be reported when diagnoses are reported in a certain ICD-10-CM diagnostic range.

Ranges of external cause codes are reserved for broad categories of injuries, such as those arising from motor vehicle accidents, falls, firearms, and so forth. ICD-10 codes within the range of V00-Y99 are external cause codes. The range of T36-T65 is also included for poisoning, as external cause codes are not required for this diagnosis range. Only initial visits are included in the Wisconsin Injury tables. With ICD-10 external cause codes were greatly expanded so an individual code can provide the nature of the injury, the location of the injury, and also the intent (accidental, self-inflicted, assault, and undetermined).

In this report external cause codes have been grouped into broader categories, like those described above. These groups are similar to those being suggested nationally for reporting injury mortality and morbidity.

Although many categories are self-explanatory, some merit further explanation:

- *Motor vehicle traffic* accidents are those involving motor vehicles that occur on public roads.
- *Motor vehicle nontraffic* accidents are those involving a motor vehicle that occur entirely off public roads.

Motor vehicles are defined as mechanically or electrically powered devices that can transport people or property on a highway. They include both on-road (e.g., automobile, motorcycle, bus) and off-road (e.g., snowmobile, ATV) devices.

- *Other pedal cycle* accidents include bicycle or tricycle accidents that are either non-motor vehicle or motor vehicle nontraffic in nature.
- *Other transport* includes all types of accidents involving trains, watercraft, aircraft, or transport animals, but not involving motor vehicles or pedal cycles. For instance, watercraft accidents include injuries arising from collisions with other boats, overturning or sinking of boats, fires and explosions on boats, etc.
- *Natural/environmental* injuries include those caused by exposure, hunger, thirst, venomous animals and plants, other animals (e.g., dog bites), and cataclysmic storms, lightning, or earth movement (e.g., mudslides).
- *Striking/struck by* includes injuries caused by falling objects, accidentally striking against or being struck by objects or persons (e.g., sports accidents), unarmed fights, and being intentionally struck by blunt or thrown objects.

This chapter includes information on injuries for hospital inpatients and patients treated in hospital-based ambulatory surgery settings and FASCs. The database excludes persons treated in emergency rooms but not admitted to the hospital (because they either died or were treated and released). In Chapter VIII of this report, you can find similar information for emergency department visits.

The table on the next page presents statewide data; tables follow it for each of nine analysis areas dividing the state. The tables show the number of cases, the rate per

100,000 population (based on the 2018 population estimates acquired from the U.S. Census Bureau – see Appendix 1), and the total charges for each injury category. Totals are also shown for self-inflicted injuries and injuries caused by assault. Inpatient and ambulatory surgery data are combined.

The Analysis Areas referenced in the tables are located in Appendix 3, Wisconsin Analysis Areas.

This chapter concludes with two additional statewide tables: one displays data on self-inflicted injuries by sex; the other presents data on assaultive injuries by sex.

To be consistent with previous reports, “Legal Intervention” external cause codes were categorized as “Assault” for purposes of Tables 13-22.



**Table 13. Wisconsin Injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and freestanding ambulatory surgery centers), All Analysis Areas - Statewide, 2018**

Injury Category	Number of Cases	Rate per 100,000 population	Total Charges
Cut/Pierce	2,585	44.5	\$57,975,674
Accidental	1,716	29.5	\$35,394,449
Self-Inflicted	722	12.4	\$13,681,978
Assault	140	2.4	\$8,499,944
Undetermined	7	0.1	\$399,303
Drown/Submersion	18	0.3	\$937,560
Accidental	12	0.2	\$709,512
Self-Inflicted/Assault/Undetermined	6	0.1	\$228,048
Falls	35,577	612.0	\$1,401,536,422
Accidental	35,540	611.3	\$1,397,755,540
Self-Inflicted/Assault/Undetermined	37	0.6	\$3,780,882
Fire/Flames	293	5.0	\$31,010,864
Accidental	267	4.6	\$28,844,268
Self-Inflicted/Assault/Undetermined	26	0.4	\$2,166,596
Firearms	473	8.1	\$42,040,417
Accidental	273	4.7	\$22,169,104
Self-Inflicted	31	0.5	\$5,603,461
Assault	158	2.7	\$13,835,472
Undetermined	11	0.2	\$432,381
Hot Objects/Scalds	1,147	19.7	\$35,203,821
Accidental	406	7.0	\$17,024,395
Self-Inflicted/Assault/Undetermined	741	12.7	\$18,179,426
Machinery	837	14.4	\$22,381,331
Motor Veh Traffic	3,997	68.8	\$296,894,690
Accidental	3,980	68.5	\$296,143,919
Self-Inflicted/Assault/Undetermined	17	0.3	\$750,771
Oth Pedal Cycle	735	12.6	\$25,259,005
Oth Mot Veh Nontraffic	1,098	18.9	\$48,811,031
Oth Transport	254	4.4	\$8,923,558
Natural/Environmental	27,549	473.9	\$795,835,467
Overexertion	4,511	77.6	\$89,491,532
Poisoning	35,229	606.0	\$1,756,910,012
Accidental	1,145	19.7	\$39,438,986
Self-Inflicted	1,440	24.8	\$27,541,480
Assault	1	0.0	\$8,700
Undetermined	32,643	561.5	\$1,689,920,845
Striking/Struck By	3,759	64.7	\$109,014,045
Accidental	3,166	54.5	\$88,788,444
Assault	593	10.2	\$20,225,601
Other Injury	826	14.2	\$18,035,312
Accidental	734	12.6	\$14,675,047
Self-Inflicted	25	0.4	\$685,319
Assault	53	0.9	\$2,295,775
Undetermined	7	0.1	\$227,676
Others	7	0.1	\$151,495
Total Injuries	118,888	2,045.0	\$4,740,260,739
Total Self-Inflicted	2,723	46.8	\$63,580,012
Total Assaults	964	16.6	\$45,721,324

Source: Inpatient Data, WHA Information Center, LLC.

**Table 14. Wisconsin Injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and freestanding ambulatory surgery centers), Analysis Area 1 - Southern, 2018**

Injury Category	Number of Cases	Rate per 100,000 population	Total Charges
Cut/Pierce	525	45.8	\$11,763,737
Accidental	380	33.1	\$6,747,243
Self-Inflicted	117	10.2	\$2,699,530
Assault	25	2.2	\$2,222,291
Undetermined	3	0.3	\$94,673
Drown/Submersion	1	0.1	\$206,794
Accidental	1	0.1	\$206,794
Self-Inflicted/Assault/Undetermined	0	N/A	N/A
Falls	6,449	562.6	\$269,599,088
Accidental	6,445	562.2	\$268,025,736
Self-Inflicted/Assault/Undetermined	4	0.3	\$1,573,352
Fire/Flames	139	12.1	\$8,796,494
Accidental	132	11.5	\$8,538,853
Self-Inflicted/Assault/Undetermined	7	0.6	\$257,641
Firearms	86	7.5	\$9,746,243
Accidental	56	4.9	\$4,799,882
Self-Inflicted	6	0.5	\$1,465,259
Assault	22	1.9	\$3,250,239
Undetermined	2	0.2	\$230,863
Hot Objects/Scalds	220	19.2	\$9,176,547
Accidental	143	12.5	\$6,605,619
Self-Inflicted/Assault/Undetermined	77	6.7	\$2,570,928
Machinery	153	13.3	\$4,648,347
Motor Veh Traffic	825	72.0	\$76,408,131
Accidental	820	71.5	\$76,273,364
Self-Inflicted/Assault/Undetermined	5	0.4	\$134,767
Oth Pedal Cycle	168	14.7	\$6,285,292
Oth Mot Veh Nontraffic	210	18.3	\$12,184,844
Oth Transport	57	5.0	\$2,365,633
Natural/Environmental	5,262	459.0	\$148,288,341
Overexertion	735	64.1	\$15,544,762
Poisoning	6,593	575.1	\$389,572,299
Accidental	190	16.6	\$6,627,260
Self-Inflicted	316	27.6	\$6,973,901
Assault	0	N/A	N/A
Undetermined	6,087	531.0	\$375,971,138
Striking/Struck By	649	56.6	\$19,289,472
Accidental	546	47.6	\$14,722,566
Assault	103	9.0	\$4,566,906
Other Injury	119	10.4	\$3,140,633
Accidental	104	9.1	\$2,298,145
Self-Inflicted	7	0.6	\$287,505
Assault	6	0.5	\$411,679
Undetermined	2	0.2	\$143,304
Others	0	N/A	N/A
Total Injuries	22,191	1,935.8	\$987,016,657
Total Self-Inflicted	520	45.4	\$15,170,960
Total Assaults	158	13.8	\$10,501,259

Source: Inpatient Data, WHA Information Center, LLC.

**Table 15. Wisconsin Injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and freestanding ambulatory surgery centers), Analysis Area 2A - Southeastern, 2018**

Injury Category	Number of Cases	Rate per 100,000 population	Total Charges
Cut/Pierce	350	31.9	\$7,347,698
Accidental	238	21.7	\$4,787,486
Self-Inflicted	101	9.2	\$1,815,546
Assault	9	0.8	\$595,757
Undetermined	2	0.2	\$148,909
Drown/Submersion	2	0.2	\$120,807
Accidental	2	0.2	\$120,807
Self-Inflicted/Assault/Undetermined	0	N/A	N/A
Falls	6,401	583.2	\$256,691,473
Accidental	6,396	582.8	\$256,592,747
Self-Inflicted/Assault/Undetermined	5	0.5	\$98,726
Fire/Flames	22	2.0	\$167,902
Accidental	22	2.0	\$167,902
Self-Inflicted/Assault/Undetermined	0	N/A	N/A
Firearms	27	2.5	\$891,928
Accidental	14	1.3	\$319,332
Self-Inflicted	1	0.1	\$45,947
Assault	9	0.8	\$461,065
Undetermined	3	0.3	\$65,584
Hot Objects/Scalds	134	12.2	\$4,205,420
Accidental	50	4.6	\$881,504
Self-Inflicted/Assault/Undetermined	84	7.7	\$3,323,916
Machinery	72	6.6	\$1,763,153
Motor Veh Traffic	485	44.2	\$20,785,812
Accidental	484	44.1	\$20,784,752
Self-Inflicted/Assault/Undetermined	1	0.1	\$1,060
Oth Pedal Cycle	78	7.1	\$2,705,548
Oth Mot Veh Nontraffic	128	11.7	\$4,876,189
Oth Transport	28	2.6	\$1,023,655
Natural/Environmental	5,415	493.4	\$151,127,064
Overexertion	701	63.9	\$17,475,936
Poisoning	5,952	542.3	\$231,539,237
Accidental	206	18.8	\$6,662,756
Self-Inflicted	171	15.6	\$2,725,137
Assault	1	0.1	\$8,700
Undetermined	5,574	507.9	\$222,142,643
Striking/Struck By	600	54.7	\$18,711,895
Accidental	547	49.8	\$16,891,753
Assault	53	4.8	\$1,820,142
Other Injury	122	11.1	\$2,638,982
Accidental	112	10.2	\$2,410,626
Self-Inflicted	3	0.3	\$50,453
Assault	6	0.5	\$159,204
Undetermined	1	0.1	\$18,699
Others	0	N/A	N/A
	Total Injuries	20,517	\$722,072,700
	Total Self-Inflicted	335	\$7,355,265
	Total Assaults	78	\$3,044,869

Source: Inpatient Data, WHA Information Center, LLC.

**Table 16. Wisconsin Injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and freestanding ambulatory surgery centers), Analysis Area 2B - Milwaukee County, 2018**

Injury Category	Number of Cases	Rate per 100,000 population	Total Charges
Cut/Pierce	536	56.5	\$21,655,214
Accidental	340	35.9	\$12,865,514
Self-Inflicted	116	12.2	\$3,749,665
Assault	79	8.3	\$4,904,822
Undetermined	1	0.1	\$135,214
Drown/Submersion	4	0.4	\$228,735
Accidental	1	0.1	\$82,817
Self-Inflicted/Assault/Undetermined	3	0.3	\$145,919
Falls	7,472	788.0	\$429,649,874
Accidental	7,456	786.3	\$428,070,475
Self-Inflicted/Assault/Undetermined	16	1.7	\$1,579,398
Fire/Flames	100	10.5	\$21,518,783
Accidental	88	9.3	\$19,705,985
Self-Inflicted/Assault/Undetermined	12	1.3	\$1,812,798
Firearms	276	29.1	\$28,427,540
Accidental	148	15.6	\$15,688,841
Self-Inflicted	10	1.1	\$3,585,096
Assault	115	12.1	\$9,110,314
Undetermined	3	0.3	\$43,290
Hot Objects/Scalds	440	46.4	\$13,572,863
Accidental	109	11.5	\$6,118,835
Self-Inflicted/Assault/Undetermined	331	34.9	\$7,454,028
Machinery	145	15.3	\$7,761,851
Motor Veh Traffic	1,244	131.2	\$125,057,952
Accidental	1,241	130.9	\$124,680,233
Self-Inflicted/Assault/Undetermined	3	0.3	\$377,719
Oth Pedal Cycle	173	18.2	\$8,551,294
Oth Mot Veh Nontraffic	146	15.4	\$7,272,602
Oth Transport	20	2.1	\$718,308
Natural/Environmental	5,919	624.2	\$260,738,868
Overexertion	546	57.6	\$14,891,541
Poisoning	10,464	1,103.6	\$757,113,068
Accidental	407	42.9	\$17,235,478
Self-Inflicted	220	23.2	\$6,104,504
Assault	0	N/A	N/A
Undetermined	9,837	1,037.4	\$733,773,085
Striking/Struck By	955	100.7	\$38,071,627
Accidental	713	75.2	\$28,192,452
Assault	242	25.5	\$9,879,175
Other Injury	170	17.9	\$5,716,677
Accidental	127	13.4	\$4,035,023
Self-Inflicted	6	0.6	\$160,126
Assault	34	3.6	\$1,424,895
Undetermined	1	0.1	\$22,384
Others	2	0.2	\$74,250
	Total Injuries	28,610	\$1,740,946,796
	Total Self-Inflicted	511	\$20,044,426
	Total Assaults	479	\$25,848,477

Source: Inpatient Data, WHA Information Center, LLC.

**Table 17. Wisconsin Injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and freestanding ambulatory surgery centers), Analysis Area 3 - Lake Winnebago, 2018**

Injury Category	Number of Cases	Rate per 100,000 population	Total Charges
Cut/Pierce	319	51.3	\$3,569,378
Accidental	223	35.9	\$2,286,381
Self-Inflicted	88	14.2	\$983,839
Assault	8	1.3	\$299,158
Undetermined	0	N/A	N/A
Drown/Submersion	1	0.2	\$33,638
Accidental	1	0.2	\$33,638
Self-Inflicted/Assault/Undetermined	0	N/A	N/A
Falls	3,095	498.1	\$70,263,168
Accidental	3,088	497.0	\$69,906,862
Self-Inflicted/Assault/Undetermined	7	1.1	\$356,306
Fire/Flames	7	1.1	\$106,464
Accidental	5	0.8	\$87,114
Self-Inflicted/Assault/Undetermined	2	0.3	\$19,350
Firearms	20	3.2	\$588,700
Accidental	14	2.3	\$185,101
Self-Inflicted	4	0.6	\$195,532
Assault	2	0.3	\$208,067
Undetermined	0	N/A	N/A
Hot Objects/Scalds	89	14.3	\$1,366,013
Accidental	23	3.7	\$383,019
Self-Inflicted/Assault/Undetermined	66	10.6	\$982,994
Machinery	126	20.3	\$1,816,816
Motor Veh Traffic	320	51.5	\$15,686,489
Accidental	317	51.0	\$15,670,375
Self-Inflicted/Assault/Undetermined	3	0.5	\$16,114
Oth Pedal Cycle	97	15.6	\$2,061,185
Oth Mot Veh Nontraffic	123	19.8	\$3,456,449
Oth Transport	34	5.5	\$1,102,295
Natural/Environmental	2,054	330.6	\$38,472,616
Overexertion	654	105.3	\$7,852,412
Poisoning	2,796	450.0	\$67,969,741
Accidental	68	10.9	\$1,720,917
Self-Inflicted	211	34.0	\$2,848,170
Assault	0	N/A	N/A
Undetermined	2,517	405.1	\$63,400,653
Striking/Struck By	398	64.1	\$6,299,098
Accidental	359	57.8	\$5,814,288
Assault	39	6.3	\$484,810
Other Injury	103	16.6	\$1,008,175
Accidental	101	16.3	\$996,291
Self-Inflicted	2	0.3	\$11,884
Assault	0	N/A	N/A
Undetermined	0	N/A	N/A
Others	0	N/A	N/A
Total Injuries	10,236	1,647.4	\$221,652,637
Total Self-Inflicted	372	59.9	\$4,914,944
Total Assaults	49	7.9	\$992,035

Source: Inpatient Data, WHA Information Center, LLC.

**Table 18. Wisconsin Injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and freestanding ambulatory surgery centers), Analysis Area 4 - Northeastern, 2018**

Injury Category	Number of Cases	Rate per 100,000 population	Total Charges
Cut/Pierce	283	44.9	\$4,583,276
Accidental	162	25.7	\$2,736,388
Self-Inflicted	117	18.6	\$1,750,848
Assault	4	0.6	\$96,039
Undetermined	0	N/A	N/A
Drown/Submersion	3	0.5	\$181,413
Accidental	3	0.5	\$181,413
Self-Inflicted/Assault/Undetermined	0	N/A	N/A
Falls	4,021	638.6	\$129,711,386
Accidental	4,017	638.0	\$129,541,692
Self-Inflicted/Assault/Undetermined	4	0.6	\$169,694
Fire/Flames	7	1.1	\$59,613
Accidental	6	1.0	\$51,140
Self-Inflicted/Assault/Undetermined	1	0.2	\$8,473
Firearms	13	2.1	\$967,255
Accidental	7	1.1	\$440,735
Self-Inflicted	2	0.3	\$131,292
Assault	4	0.6	\$395,229
Undetermined	0	N/A	N/A
Hot Objects/Scalds	144	22.9	\$3,693,831
Accidental	28	4.4	\$988,743
Self-Inflicted/Assault/Undetermined	116	18.4	\$2,705,089
Machinery	98	15.6	\$1,636,243
Motor Veh Traffic	383	60.8	\$16,705,994
Accidental	381	60.5	\$16,514,071
Self-Inflicted/Assault/Undetermined	2	0.3	\$191,923
Oth Pedal Cycle	74	11.8	\$1,990,002
Oth Mot Veh Nontraffic	114	18.1	\$4,038,656
Oth Transport	38	6.0	\$1,040,439
Natural/Environmental	4,419	701.9	\$103,948,343
Overexertion	670	106.4	\$12,601,311
Poisoning	2,578	409.5	\$93,785,786
Accidental	89	14.1	\$3,158,362
Self-Inflicted	144	22.9	\$2,923,651
Assault	0	N/A	N/A
Undetermined	2,345	372.4	\$87,703,773
Striking/Struck By	467	74.2	\$10,644,807
Accidental	414	65.8	\$9,359,471
Assault	53	8.4	\$1,285,336
Other Injury	96	15.2	\$2,005,584
Accidental	90	14.3	\$1,920,368
Self-Inflicted	3	0.5	\$41,866
Assault	2	0.3	\$30,705
Undetermined	1	0.2	\$12,645
Others	0	N/A	N/A
	Total Injuries	13,408	\$387,593,939
	Total Self-Inflicted	350	\$6,281,336
	Total Assaults	65	\$1,999,232

Source: Inpatient Data, WHA Information Center, LLC.



**Table 19. Wisconsin Injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and freestanding ambulatory surgery centers), Analysis Area 5A - West Central, 2018**

<b>Injury Category</b>	<b>Number of Cases</b>	<b>Rate per 100,000 population</b>	<b>Total Charges</b>
Cut/Pierce	255	51.9	\$3,897,262
Accidental	161	32.8	\$2,562,978
Self-Inflicted	88	17.9	\$1,208,168
Assault	5	1.0	\$105,609
Undetermined	1	0.2	\$20,508
Drown/Submersion	2	0.4	\$79,467
Accidental	0	N/A	N/A
Self-Inflicted/Assault/Undetermined	2	0.4	\$79,467
Falls	2,570	523.5	\$76,345,882
Accidental	2,569	523.3	\$76,342,476
Self-Inflicted/Assault/Undetermined	1	0.2	\$3,406
Fire/Flames	5	1.0	\$147,034
Accidental	3	0.6	\$96,906
Self-Inflicted/Assault/Undetermined	2	0.4	\$50,128
Firearms	11	2.2	\$280,458
Accidental	7	1.4	\$139,301
Self-Inflicted	1	0.2	\$27,721
Assault	2	0.4	\$90,435
Undetermined	1	0.2	\$23,001
Hot Objects/Scalds	34	6.9	\$663,578
Accidental	12	2.4	\$405,249
Self-Inflicted/Assault/Undetermined	22	4.5	\$258,329
Machinery	84	17.1	\$1,080,740
Motor Veh Traffic	234	47.7	\$11,077,960
Accidental	234	47.7	\$11,077,960
Self-Inflicted/Assault/Undetermined	0	N/A	N/A
Oth Pedal Cycle	53	10.8	\$1,183,762
Oth Mot Veh Nontraffic	91	18.5	\$2,854,283
Oth Transport	21	4.3	\$606,368
Natural/Environmental	1,592	324.3	\$30,370,266
Overexertion	407	82.9	\$7,102,492
Poisoning	2,149	437.7	\$69,629,136
Accidental	62	12.6	\$1,450,746
Self-Inflicted	141	28.7	\$2,075,641
Assault	0	N/A	N/A
Undetermined	1,946	396.4	\$66,102,749
Striking/Struck By	226	46.0	\$4,908,131
Accidental	187	38.1	\$4,015,613
Assault	39	7.9	\$892,518
Other Injury	89	18.1	\$1,223,179
Accidental	84	17.1	\$1,150,288
Self-Inflicted	1	0.2	\$33,541
Assault	3	0.6	\$36,694
Undetermined	0	N/A	N/A
Others	1	0.2	\$2,657
<b>Total Injuries</b>	<b>7,823</b>	<b>1,593.4</b>	<b>\$211,449,998</b>
<b>Total Self-Inflicted</b>	<b>255</b>	<b>51.9</b>	<b>\$3,650,211</b>
<b>Total Assaults</b>	<b>50</b>	<b>10.2</b>	<b>\$1,127,912</b>

Source: Inpatient Data, WHA Information Center, LLC.

**Table 20. Wisconsin Injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and freestanding ambulatory surgery centers), Analysis Area 5B - Southwestern, 2018**

Injury Category	Number of Cases	Rate per 100,000 population	Total Charges
Cut/Pierce	109	39.7	\$2,463,267
Accidental	79	28.8	\$1,736,465
Self-Inflicted	25	9.1	\$603,125
Assault	5	1.8	\$123,677
Undetermined	0	N/A	N/A
Drown/Submersion	2	0.7	\$28,247
Accidental	1	0.4	\$25,586
Self-Inflicted/Assault/Undetermined	1	0.4	\$2,662
Falls	1,632	594.7	\$51,642,900
Accidental	1,632	594.7	\$51,642,900
Self-Inflicted/Assault/Undetermined	0	N/A	N/A
Fire/Flames	6	2.2	\$95,131
Accidental	4	1.5	\$76,923
Self-Inflicted/Assault/Undetermined	2	0.7	\$18,207
Firearms	18	6.6	\$534,758
Accidental	12	4.4	\$273,427
Self-Inflicted	4	1.5	\$93,595
Assault	1	0.4	\$120,814
Undetermined	1	0.4	\$46,922
Hot Objects/Scalds	30	10.9	\$1,209,161
Accidental	18	6.6	\$972,502
Self-Inflicted/Assault/Undetermined	12	4.4	\$236,660
Machinery	57	20.8	\$1,695,994
Motor Veh Traffic	153	55.8	\$8,574,386
Accidental	152	55.4	\$8,562,996
Self-Inflicted/Assault/Undetermined	1	0.4	\$11,389
Oth Pedal Cycle	27	9.8	\$624,563
Oth Mot Veh Nontraffic	84	30.6	\$3,885,221
Oth Transport	23	8.4	\$1,050,460
Natural/Environmental	861	313.8	\$19,230,432
Overexertion	250	91.1	\$5,651,212
Poisoning	1,275	464.6	\$41,427,506
Accidental	38	13.8	\$824,142
Self-Inflicted	130	47.4	\$2,043,895
Assault	0	N/A	N/A
Undetermined	1,107	403.4	\$38,559,469
Striking/Struck By	166	60.5	\$4,216,376
Accidental	143	52.1	\$3,620,604
Assault	23	8.4	\$595,772
Other Injury	38	13.8	\$541,954
Accidental	36	13.1	\$502,568
Self-Inflicted	0	N/A	N/A
Assault	1	0.4	\$13,355
Undetermined	0	N/A	N/A
Others	1	0.4	\$26,030
Total Injuries	4,731	1,724.1	\$142,871,567
Total Self-Inflicted	173	63.0	\$2,993,227
Total Assaults	31	11.3	\$879,649

Source: Inpatient Data, WHA Information Center, LLC.



**Table 21. Wisconsin Injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and freestanding ambulatory surgery centers), Analysis Area 6 - North Central, 2018**

Injury Category	Number of Cases	Rate per 100,000 population	Total Charges
Cut/Pierce	175	37.7	\$2,220,315
Accidental	119	25.6	\$1,502,972
Self-Inflicted	52	11.2	\$576,540
Assault	4	0.9	\$140,804
Undetermined	0	N/A	N/A
Drown/Submersion	3	0.6	\$58,457
Accidental	3	0.6	\$58,457
Self-Inflicted/Assault/Undetermined	0	N/A	N/A
Falls	3,634	782.4	\$113,087,544
Accidental	3,634	782.4	\$113,087,544
Self-Inflicted/Assault/Undetermined	0	N/A	N/A
Fire/Flames	6	1.3	\$110,629
Accidental	6	1.3	\$110,629
Self-Inflicted/Assault/Undetermined	0	N/A	N/A
Firearms	20	4.3	\$551,079
Accidental	14	3.0	\$299,376
Self-Inflicted	2	0.4	\$29,672
Assault	3	0.6	\$199,309
Undetermined	1	0.2	\$22,722
Hot Objects/Scalds	47	10.1	\$1,161,420
Accidental	20	4.3	\$605,466
Self-Inflicted/Assault/Undetermined	27	5.8	\$555,954
Machinery	99	21.3	\$1,950,043
Motor Veh Traffic	343	73.8	\$22,441,923
Accidental	341	73.4	\$22,424,124
Self-Inflicted/Assault/Undetermined	2	0.4	\$17,799
Oth Pedal Cycle	65	14.0	\$1,857,359
Oth Mot Veh Nontraffic	197	42.4	\$10,170,927
Oth Transport	29	6.2	\$977,843
Natural/Environmental	1,852	398.7	\$41,279,365
Overexertion	517	111.3	\$7,948,384
Poisoning	3,137	675.4	\$101,594,472
Accidental	76	16.4	\$1,630,295
Self-Inflicted	88	18.9	\$1,442,634
Assault	0	N/A	N/A
Undetermined	2,973	640.1	\$98,521,543
Striking/Struck By	264	56.8	\$6,418,128
Accidental	228	49.1	\$5,778,177
Assault	36	7.8	\$639,951
Other Injury	81	17.4	\$1,675,147
Accidental	72	15.5	\$1,276,758
Self-Inflicted	3	0.6	\$99,945
Assault	1	0.2	\$219,242
Undetermined	2	0.4	\$30,644
Others	3	0.6	\$48,559
Total Injuries	10,469	2,253.9	\$313,503,037
Total Self-Inflicted	168	36.2	\$2,432,809
Total Assaults	48	10.3	\$1,255,113

Source: Inpatient Data, WHA Information Center, LLC.

**Table 22. Wisconsin Injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and freestanding ambulatory surgery centers), Analysis Area 7 - Western Lake Superior, 2018**

<b>Injury Category</b>	<b>Number of Cases</b>	<b>Rate per 100,000 population</b>	<b>Total Charges</b>
Cut/Pierce	33	23.5	\$475,527
Accidental	14	10.0	\$169,023
Self-Inflicted	18	12.8	\$294,718
Assault	1	0.7	\$11,787
Undetermined	0	N/A	N/A
Drown/Submersion	0	N/A	N/A
Accidental	0	N/A	N/A
Self-Inflicted/Assault/Undetermined	0	N/A	N/A
Falls	303	215.4	\$4,545,107
Accidental	303	215.4	\$4,545,107
Self-Inflicted/Assault/Undetermined	0	N/A	N/A
Fire/Flames	1	0.7	\$8,814
Accidental	1	0.7	\$8,814
Self-Inflicted/Assault/Undetermined	0	N/A	N/A
Firearms	2	1.4	\$52,456
Accidental	1	0.7	\$23,108
Self-Inflicted	1	0.7	\$29,347
Assault	0	N/A	N/A
Undetermined	0	N/A	N/A
Hot Objects/Scalds	9	6.4	\$154,988
Accidental	3	2.1	\$63,459
Self-Inflicted/Assault/Undetermined	6	4.3	\$91,528
Machinery	3	2.1	\$28,144
Motor Veh Traffic	10	7.1	\$156,043
Accidental	10	7.1	\$156,043
Self-Inflicted/Assault/Undetermined	0	N/A	N/A
Oth Pedal Cycle	0	N/A	N/A
Oth Mot Veh Nontraffic	5	3.6	\$71,861
Oth Transport	4	2.8	\$38,558
Natural/Environmental	175	124.4	\$2,380,170
Overexertion	31	22.0	\$423,482
Poisoning	285	202.6	\$4,278,768
Accidental	9	6.4	\$129,028
Self-Inflicted	19	13.5	\$403,947
Assault	0	N/A	N/A
Undetermined	257	182.7	\$3,745,793
Striking/Struck By	34	24.2	\$454,509
Accidental	29	20.6	\$393,518
Assault	5	3.6	\$60,991
Other Injury	8	5.7	\$84,980
Accidental	8	5.7	\$84,980
Self-Inflicted	0	N/A	N/A
Assault	0	N/A	N/A
Undetermined	0	N/A	N/A
Others	0	N/A	N/A
Total Injuries	903	641.9	\$13,153,408
Total Self-Inflicted	39	27.7	\$736,834
Total Assaults	6	4.3	\$72,778

Source: Inpatient Data, WHA Information Center, LLC.

**Table 23. Self-inflicted Injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and freestanding ambulatory surgery centers), 2018**

Injury Category	Number of Cases		
	Male	Female	Total Cases
Cutting/Piercing	290	432	722
Drowning/Submersion	1	4	5
Firearms And Explosives	25	6	31
Jumping From A High Place	15	8	23
Other Self-Inflicted Injuries	237	265	502
Poisoning	472	968	1,440
<b>Total Self-Inflicted Injuries</b>	<b>1,040</b>	<b>1,683</b>	<b>2,723</b>

Source: Inpatient Data, WHA Information Center, LLC.

**Table 24. Assaultive Injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and freestanding ambulatory surgery centers), 2018**

Injury Category	Number of Cases		
	Male	Female	Total Cases
Bite Of Human Being	22	4	26
Cutting/Piercing	112	28	140
Firearms And Explosives	136	15	151
Other Assaultive Injuries	51	21	72
Poisoning	0	1	1
Striking By Blunt Or Thrown Object	54	15	69
Unarmed Fight Or Brawl	345	160	505
<b>Total Self-Inflicted Injuries</b>	<b>720</b>	<b>244</b>	<b>964</b>

Source: Inpatient Data, WHA Information Center, LLC.



## CHAPTER IV. OVERVIEW OF INDIVIDUAL HOSPITAL INPATIENT TABLES

### Hospitals that Reported Data

Data were collected from 130 general medical-surgical hospitals, six long-term acute care hospitals (LTAC), twelve psychiatric hospitals, one alcohol and other drug abuse (AODA) hospital, three rehabilitation facilities, and two state-operated mental health institutes on all inpatients discharged between January 1, 2018, and December 31, 2018. The database includes partial-year data from hospitals that opened or closed during the calendar year. Please refer to Appendix 4 for all openings, closings, and mergers as they relate to facilities that submitted data in 2018.

### How to Read the Tables

#### GMS Hospital Tables

Each individual GMS hospital table contains the following two pages of information:

##### *First Page*

Heading: The heading identifies basic facility information. This includes the hospital's three-digit facility number, name, address, and telephone number; the hospital type (in this case, GMS); the county in which the hospital is located; and the analysis area and inpatient volume group to which it was assigned by WHA Information Center.

Middle Section: The middle section contains utilization data. This is divided into the following six subsections: Overall Hospital Utilization, Obstetrical Utilization, Psychiatric Utilization, AODA Utilization, Patient Discharge Status Distribution, and Expected Pay Source Distribution.

*Overall Hospital Utilization:* These data provide an overall picture of utilization and charges at the facility. Included are total discharges, total patient days, average length of stay, and average charge per discharge for the calendar year. These items describe the number of inpatients discharged by a facility, the total number of days those patients stayed at the hospital, the number of days an average patient stayed, and the average charge billed for patients at the facility.

*Obstetrical Utilization:* The obstetric data identify the number of mothers who gave birth at the hospital (Total Childbirths) and the percentage of those childbirths that were "normal," that involved C-sections, or that had complications or involved additional procedures (e.g., sterilization).

Below that, in the category "Total Newborns," appears the number of newborns reported by the hospital during the calendar year. The number of childbirths and newborns may differ because, for example, some babies may have died during delivery, and some mothers may have given birth to twins, triplets, etc. "Total Newborns" includes those who were born elsewhere but admitted on the day of their birth.

*Psychiatric/AODA Utilization:* These sections list the number of discharges and patient days attributed to those patients undergoing treatment for psychiatric disorders or alcohol and other drug abuse (AODA).

The table also lists the percentage of the hospital's total discharges and patient days that were attributable to patients in either psychiatric or AODA inpatient care. For example, if a hospital reported 10 patients discharged from psychiatric care out of 1,000 total discharges, then 1.0 percent of the hospital's discharges would be attributed to patients receiving psychiatric inpatient services.

*Patient Discharge Status Distribution:* This section describes where patients went after being discharged from the hospital. It lists the percentage of patients who went home, were transferred to another GMS or CAH hospital, were sent to another facility (skilled nursing, intermediate care, rehabilitation facility or hospice), were sent to another type of institution (e.g., a half-way house or residential facility), were referred to a home health agency (for home care or intravenous drug therapy), left the hospital against medical advice, expired (i.e., died), were sent to jail, prison, or other detention facilities or were discharged to some other type of care (which includes transfer to a federal hospital, a Medicare approved swing bed, a Medicare certified long-term hospital, or a nursing facility certified under Medicaid but not certified under Medicare).

*Expected Pay Source Distribution:* This section lists the primary payer that is expected to reimburse the hospital for services. The payer categories are Medicare, Medicaid/BadgerCare, other government (e.g., county general relief, 51.42 Boards), commercial insurance, self-pay, and unknown. The category “Commercial Insurance” includes traditional and self-funded plans, private alternate payment systems (e.g., HMOs, PPOs), and Workers’ Compensation.

*Note: Primary payer data reflects the party billed for the service at the time of patient discharge. The actual payer may differ if the facility cannot collect from an expected payer or a third-party payer later finds a patient to be ineligible for coverage. Summary data on actual payers can be found in the Guide to Wisconsin Hospitals, published annually. Primary Payer assignment criteria can be found in Appendix 2 – Methodology and Technical Notes.*

**Bottom Section:** This section describes patient characteristics including age, sex, and race.

*Age Distribution:* This section presents the percentage of total discharges and patient days reported for various age groups. The groups are based on U.S. Census categories and have been expanded from previous years.

*Sex Distribution:* This section presents the percentage of total discharges and patient days reported for males and females.

*Race Distribution:* This section presents the percentage of total discharges and patient days reported for various racial groups. The groups are based on census categories and include American Indian/Alaskan Native, Asian, Black/African American, Native Hawaiian/Pacific Islander, White, Multiracial, Declined, and Unavailable. This information is not part of the standard billing form that hospitals use. Patients are not required to provide race information; hospitals rely on the cooperation of patients.

## **Second Page**

The second page of each GMS hospital table presents utilization and charge data for selected APR-DRGs. Data are presented for the individual hospital and for three comparison groups. The comparison groups include all GMS hospitals in the same analysis area, all hospital in the same inpatient volume group, and all GMS hospitals statewide.

APR-DRGs were selected by choosing the 15 most common APR-DRGs at hospitals in each of the inpatient volume groups. Therefore, the APR-DRGs used to compare hospitals in one inpatient volume group may differ from those used to compare hospitals in another inpatient volume group.

*Note: The Normal Newborn, Birthweight 2500g+ (APR-DRG 640) category will not always correspond with the number of newborns on page 1. Some babies who are admitted after the day of their birth are classified as APR-DRG 640.*

**Average Length of Stay (ALOS):** This section lists the number of discharges and the average length of stay at the hospital for each of the 15 selected APR-DRGs. The hospital averages are then compared to the average length of stay at the three comparison groups, and a ratio of that comparison is computed.

If the hospital reported a length of stay for a given APR-DRG that was greater than the average reported by hospitals in a comparison group, the ratio would be greater than 1.00; if it was equal, the ratio would be 1.00; if it was less at the hospital than in the comparison groups the ratio would be less than 1.00.

*Example:* If the average length of stay for an APR-DRG at Hospital A was 2.1 days and the analysis area average was 2.0, the ratio in the analysis area column would be 1.05 (2.1 divided by 2.0). This means that the average length of stay at Hospital A was 5 percent longer than the average stay for the analysis area as a whole.

**Average Charge:** This section displays actual and risk adjusted average charge data for the selected APR-DRGs. Actual average charges are presented for the hospital. Risk adjusted average charges are shown for the hospital and for the comparison groups. Risk adjusted average charges were calculated by removing the effect of severity variation from each patient's charges and averaging the results for the hospital and comparison groups.

The hospital's risk adjusted average charges may be compared to the risk adjusted average charges of the comparison groups. While risk adjustment attempts to remove severity differences, other "unadjusted" factors may influence variation. For example, differences in the accuracy and completeness of coding can affect the apparent severity of illness.

Some of these factors stem from the inherent constraints of using administrative data in risk adjustment. For example, administrative data may indicate that a patient has congestive heart failure, but relevant clinical details (e.g., left ventricular ejection fraction) may not be included in the billing record and therefore may not be available for use in calculating severity of illness.

The table lists the risk adjusted charge for each of the comparison groups (analysis area, inpatient volume group, and all GMS hospitals) and calculates the ratio of the hospital's risk adjusted average charge for an APR-DRG to that of the comparison group. These ratios are calculated and may be interpreted in the same manner as the ratios for average length of stay.

No ratios are calculated for an APR-DRG when a hospital had fewer than five discharges assigned to that APR-DRG.

## **Specialty Hospital Tables**

### **LTAC Hospitals, Psychiatric and AODA Hospitals, and State-Operated Mental Health Institutes**

The tables for the LTAC hospitals, psychiatric and AODA hospitals, and the state-operated mental health institutes are presented on one page. They include much of the same descriptive data as the GMS tables, including data on APR-DRGs, but exclude risk adjusted data, and inpatient volume group and analysis area comparisons.

Heading: The top of the page contains the same information as the heading on a GMS hospital table, except that no volume group is listed since all specialty hospitals have been assigned to Inpatient Volume Group 7.

Middle Section: The middle section contains the utilization and patient characteristic data contained in the middle and bottom sections of the first page of the GMS tables, except obstetrical utilization. It is divided into the following eight subsections: Overall Hospital Utilization, Psychiatric Utilizations, AODA Utilization, Patient Discharge Status, Expected Pay Source Distribution, Age Distribution, Sex Distribution, and Race Distribution.

Bottom Section for LTAC Hospitals: This section of the table includes data on the 13 most common APR-DRGs in LTAC hospitals statewide. Facility-specific data are compared to statewide LTAC data for patients treated in LTAC hospitals only.

The first column lists the APR-DRG number and its description. The table then lists the number of discharges at the hospital for that APR-DRG.

In the columns under the broader heading “Average Length of Stay (ALOS),” the hospital’s average length of stay for the APR-DRG is compared to that of patients assigned to the same APR-DRG among all LTAC hospitals only, and a ratio of that comparison is computed. These ratios are calculated and may be interpreted in the same manner as the ratios for average length of stay at GMS hospitals.

In the columns under the broader heading “Average Charge per Discharge,” the hospital’s average charge for patients assigned to an APR-DRG is compared to the average charge for all patients assigned to that APR-DRG among all LTAC hospitals only. As with length of stay, a ratio computed from this comparison is also provided.

Bottom Section for Psychiatric Hospitals: This section of the table includes data on the 13 most common APR-DRGs in psychiatric hospitals statewide. Facility-specific data are compared to statewide psychiatric data for patients treated in psychiatric facilities only.

The first column lists the APR-DRG number and its description. The table then lists the number of discharges at the hospital for that APR-DRG.

In the columns under the broader heading “Average Length of Stay (ALOS),” the hospital’s average length of stay for the APR-DRG is compared to that of patients assigned to the same APR-DRG among all psychiatric hospitals only, and a ratio of that comparison is computed. These ratios are calculated and may be interpreted in the same manner as the ratios for average length of stay at GMS hospitals.

In the columns under the broader heading “Average Charge per Discharge,” the hospital’s average charge for patients assigned to an APR-DRG is compared to the average charge for all patients assigned to that APR-DRG among all psychiatric hospitals only. As with length of stay, a ratio computed from this comparison is also provided.

Psychiatric charge data were not risk adjusted because differences in charges among psychiatric patients typically reflect programmatic differences, rather than difference in severity of illness.



Bottom Section for AODA Hospitals: This section of the table includes data on the most common (up to 13) APR-DRGs in the AODA hospital. It presents the number of discharges, ALOS, and average charge per discharge for patients in the AODA hospital.

AODA charge data were not risk adjusted because differences in charges among AODA patients typically reflect programmatic differences, rather than difference in severity of illness.

Since there is only one AODA hospital, comparison data to 'all' AODA hospitals are not provided in this report.

Bottom Section for the State-Operated Mental Health Institutes: This section of the table includes data on the 13 most common APR-DRGs in state-operated mental health institutes. It presents the number of discharges, ALOS, and average charge per discharge for patients in the state-operated mental health institutes.

Since patients at the state-operated mental health institutes are unique in terms of illness severity, charges, and length of stay, no comparisons are made to other groups and no ratios are calculated. Average charge data are not risk adjusted for state-operated mental health institutes.

### **Rehabilitation Hospitals**

Rehabilitation hospitals are dedicated solely to rehabilitation medicine and treat a unique class of patients. Because the federal government has not yet developed APR-DRGs for rehabilitation conditions, these facilities are exempt from APR-DRG reimbursement requirements imposed on other hospitals. In addition, the rehabilitation hospitals report data differently from other hospitals that have rehabilitation units within their facilities. For these reasons, APR-DRG-based comparisons of rehabilitation hospitals with other hospitals are not valid. Although comparisons are not currently possible, this report provides a summary of the rehabilitation hospitals' utilization and charge data.

Heading: The top of the page contains the same information as the heading on a GMS hospital table, except that no volume group is listed since all specialty hospitals have been assigned to Inpatient Volume Group 7.

Middle Section: The middle section contains the utilization and patient characteristic data contained in the middle and bottom sections of the first page of the GMS tables, except obstetrical utilization. It is divided into the following eight subsections: Overall Hospital Utilization, Psychiatric Utilization, AODA Utilization, Patient Discharge Status, Expected Pay Source Distribution, Age Distribution, Sex Distribution, and Race Distribution.

Bottom Section for the Rehabilitation Hospitals: Selected Patient Groups: Utilization and charge data for rehabilitation hospital patients are presented using the rehabilitation diagnostic categories of the federal Centers for Medicare and Medicaid Services (formerly the Health Care Financing Administration). This methodology aggregates patients into broad categories, such as stroke and amputation. The rehabilitation hospital tables list the number of discharges, average length of stay, and average charge for each of the following categories:

- Stroke
- Brain Injury
- Neurologic Conditions
- Spinal Cord Injury
- Arthritis

Congenital Deformities  
Systemic Vasculidities  
Amputation  
Cardiac Disorders  
Debility  
Infections  
Medically Complex Conditions  
Pulmonary Disorders  
All Other Rehabilitation

*Note: The “All Other Rehabilitation” category is composed of all diagnostic codes not found in the other thirteen categories.*

Average charge data for rehabilitation hospitals are not risk adjusted.

## APR-DRGs Used in this report

Computer software was used to assign each hospitalization a particular APR-DRG. WHA Information Center used 3M™ Core Grouping Software which includes 3M™ APR-DRG Software to assign the APR-DRG to each hospitalization.

The grouping software used up to 30 diagnoses and 30 procedures, if submitted, for each record, along with sex, discharge status, birth date, date of admission, date of discharge, and birth weight of the patient. Since 2005, WHAIC has been collecting unlimited diagnoses and procedures on each record.

Prior to the 2007 report, WHA used DRG (Diagnosis Related Group) to classify the hospitalizations. Since there is no one-to-one crosswalk from DRGs to APR-DRGs, comparison of utilization and charges over several years may be affected.

The following APR-DRGs appear in the report

<b>APR-DRG</b>	<b>Description</b>
001	Liver Transplant
002	Heart and/or Lung Transplant
004	Tracheostomy w MV 96+ hours w extensive procedure
009	Extracorporeal membrane oxygenation (ECMO)
042	Degenerative nervous system disorders exc mult sclerosis
045	Stroke and Precerebral Occlusion with Infarct
130	Respiratory System DX w/ Vent Support 96+ Hrs
133	Respiratory failure
139	Pneumonia
140	Chronic Obstructive Pulmonary Disease
161	Defibrillator and Heart Assist Implant
162	Cardiac valve procedures w AMI or complex PDX
163	Cardiac valve procedures w/o AMI or complex PDX
165	Coronary bypass w AMI or complex PDX
166	Coronary bypass w/o AMI or complex PDX
167	Other cardiothoracic & thoracic vascular procedures
170	Pacemaker Implant with Heart Attack, Heart Failure or Shock
171	Pacemaker Implant without Heart Attack, Heart Failure or Shock
174	Percutaneous coronary intervention w AMI
175	Percutaneous coronary intervention w/o AMI
176	Pacemaker/Defibrillator Replacement
177	Pacemaker/Defibrillator Revision Except Replacement
190	Circulatory Disorders with Heart Attack
191	Cardiac catheterization for coronary artery disease
192	Cardiac catheterization for other non-coronary conditions
193	Acute & Subacute Endocarditis
194	Heart Failure
196	Cardiac arrest & shock

<b>APR-DRG</b>	<b>Description</b>
198	Chest Pain with Angina Pectoris or Coronary Atherosclerosis
199	Hypertension
200	Heart Structural and Valve Disorders
201	Heart Abnormal Rhythm and Conduction Disorders
203	Chest Pain
204	Fainting and Collapse
206	Malfunction/ Reaction/Complication of Heart Device or Procedure
282	Disorders of Pancreas Except Malignancy
301	Hip Replacement
302	Knee Replacement
303	Dorsal and Lumbar Fusion with Principal Diagnosis of Back Curvature
304	Dorsal and Lumbar Fusion Without Principal Diagnosis of Back Curvature
305	Amputation of Lower Limb Except Toes
308	Hip & femur fracture repair
309	Other significant hip & femur surgery
310	Back/Neck Procedures Except Dorsal and Lumbar Fusion
313	Other Knee/Lower Leg Surgery
314	Foot/Toe Surgery
315	Shoulder, upper arm & forearm procedures except joint replacement
316	Hand/Wrist Surgery
321	Upper Spinal Fusion
340	Thigh Fracture
341	Pelvis Fracture/Hip Dislocation
342	Fracture or Dislocation Except Thigh, Pelvis, Back
343	Musculoskeletal Malignancy
344	Osteomyelitis and Infectious Arthritis
347	Other Back/Neck Disorders, Fractures, Injuries
349	Complications Of Orthopedic Device Or Procedure
351	Other Musculoskeletal System and Connective Tissue Diagnoses
380	Skin Ulcers
383	Cellulitis & other skin infections
463	Kidney/Urinary Tract Infection
469	Acute kidney injury
540	Cesarean Delivery
541	Vaginal Delivery with Sterilization
542	Vaginal Delivery with Proc Except Sterilization
560	Vaginal Delivery
566	Other Antepartum Diagnoses
580	Neonate, Transferred <5 Days Old, Not Born Here

<b>APR-DRG</b>	<b>Description</b>
581	Neonate, Transferred <5 Days Old, Born Here
583	Neonate with External Heart and Lung Oxygen Support
588	Neonate Birthwt <1500g with Major Procedure
589	Neonate Birthwt <500g or Gestational Age <24 weeks
591	Neonate Birthwt 500-749g without Major Procedure
593	Neonate Birthwt 750-999g without Major Procedure
602	Neonate Birthwt 1000-1249g with Respiratory Distress Syndrome
603	Other Neonate Birthwt 1000-1249g
607	Neonate Birthwt 1250-1499g with Respiratory Distress Syndrome
608	Other Neonate Birthwt 1250-1499g
609	Neonate Birthwt 1500-2499g with Major Procedure
611	Neonate Birthwt 1500-1999g with Major Anomaly
612	Neonate Birthwt 1500-1999g with Respiratory Distress Syndrome
613	Neonate Birthwt 1500-1999g with Congenital Or Perinatal Infections
614	Other Neonate Birthwt 1500-1999g
621	Neonate Birthwt 2000-2499g with Major Anomaly
622	Neonate Birthwt 2000-2499g with Respiratory Distress Syndrome
623	Neonate Birthwt 2000-2499g with Congenital Or Perinatal Infections
625	Neonate Birthwt 2000-2499g with Other Significant Condition
626	Normal Newborn Birthweight 2000g - 2499g
630	Neonate Birthwt >2499g with Major Cardiovascular Procedure
631	Neonate Birthwt >2499g with Other Major Procedure
633	Neonate Birthwt >2499g with Major Anomaly
634	Neonate Birthwt >2499g with Respiratory Distress Syndrome
636	Neonate Birthwt >2499g with Congenital or Perinatal Infections
639	Neonate Birthwt >2499g with Other Significant Condition
640	Normal Newborn, Birthweight 2500g+
710	Infectious & parasitic diseases including HIV w O.R. procedure
720	Blood Infection/Septicemia
721	Postoperative and Post-Traumatic Infections
740	Mental Illness Diagnosis with O.R. Procedure
750	Schizophrenia
751	Psychoses
752	Personality and Impulse Control Disorders
753	Bipolar Disorders
754	Depression
755	Neuroses Other Than Depression
756	Acute Adjust React Psychosocial Dysfunction
757	Organic Disturbances and Mental Retardation

<b>APR-DRG</b>	<b>Description</b>
758	Behavioral disorders
759	Eating Disorders
760	Other Mental Disorders
770	Substance Abuse/Dependence, Left Against Medical Advice
772	Substance Abuse/Dependence with Rehab and/or Detox
773	Opioid Abuse/Dependence
774	Cocaine Abuse/Dependence
775	Alcohol Abuse/Dependence
776	Other Substance Abuse/Dependence
813	Complications Of Treatment
841	Burns, 3rd Degree with Skin Graft
861	Signs & Symptoms
862	Other Factors Influencing Health Status
951	Moderately Extensive Procedure Unrelated to Diagnosis
001	Liver Transplant
002	Heart and/or Lung Transplant

## Caveats/Data Limitations for Inpatient Data

1. The charge data in this report has not been audited. **As a result, the charge data provided in this report may differ from audited financial data.** All charge data provided has been rounded to the nearest whole number.
2. The reported payment sources are *expected* sources of payment at the time of billing rather than actual revenue sources. Therefore, the reported distribution of payment sources in this report may differ from the actual distribution of final revenue sources.
3. The utilization and charge figures in the narrative portion of this report were not adjusted for disease severity or any of a variety of other factors that could affect facility averages. However, risk adjustment was performed on hospital-specific APR-DRG charge data in the individual tables of GMS hospitals. In addition to differences in case mix and intensity of illness, regional pricing differentials and variations in services can affect utilization or charge figures. Also, differences in hospital patient record-keeping systems and internal information systems may affect the quality of the data submitted by individual facilities.
4. Care should be taken when comparing data from hospitals that reported small numbers of cases. A few unusual cases may unduly affect the average lengths of stay or charges for a given APR-DRG with a small number of total cases.
5. Lengths of stay for inpatients that remained in the hospital less than 24 hours were counted as one day in this report. In other analyses these may be considered zero-day lengths of stay.
6. In some cases, transfers of patients between distinct units of a hospital are submitted to WHA Information Center as separate discharges. This reflects standard billing guidelines and data submission requirements developed by the Wisconsin Bureau of Health Care Information.
7. Calculation of average charge per discharge in the following summary tables excluded any discharge with a stay longer than 100 days. An exception occurs for the two state-operated mental health institutes: charge data are included for all patients at these hospitals, except those whose length of stay was 1,000 days or greater.
  - Table 1: Comparative Summary of Utilization and Charges for Hospitalizations in Wisconsin
  - Table 2: Summary data for Wisconsin hospitals, by type
  - Table 3: Percent change in utilization and charges in Wisconsin hospitals, by type
  - Appendix 1: Comparison by Hospital Type
8. All hospitalizations of 1,000 days or longer were excluded from the data entirely.
9. Data from both rehabilitation facilities and state-operated mental health institutes were excluded from the following tables:
  - Table 4: Births in Wisconsin
  - Table 5: Neonatal hospitalizations in Wisconsin
  - Table 6: Cardiovascular hospitalizations in Wisconsin
  - Table 7: Orthopedic hospitalizations in Wisconsin

- Table 8: Psychiatric hospitalizations in Wisconsin
  - Table 9: AODA hospitalizations in Wisconsin
  - Table 10: Most common hospitalizations in Wisconsin
  - Table 11: Top 10 hospitalizations by average charge in Wisconsin
  - Table 12: Hospitalizations with the highest total charge-generating APR-DRGs in Wisconsin
10. Inpatient hospitalizations were categorized by APR-DRG in this report. Previous versions of this report categorized inpatient hospitalizations by “standard” (Medicare) DRG. APR-DRGs were developed by 3M™ Corporation to be more applicable to the general patient population. There are more main categories within APR-DRGs than “standard” DRGs although differences in severities of illness or complications are generally recognized by the assignment of one of four severities of illness subcategories within each APR-DRG. “Standard” DRG’s would often distinguish between hospitalizations with and without complications by assigning the stays to different DRGs.