
Wisconsin Health Care Data Report

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

2017

July 2018

The data for the ***Health Care Data Report, 2017*** 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 129 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 2017. Ambulatory surgery data were collected from 129 GMS hospitals and 77 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 2017, Wisconsin hospitals reported 602,083 inpatient hospitalizations, with 602,052 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 \$21.3 billion (see Table 1 for details).
- On average, a hospital patient was charged \$35,429 per hospitalization during 2017. In general medical-surgical (GMS) hospitals, the average inpatient charge was \$35,823. In the non-GMS (specialty) hospitals, charges differed between long-term care and short-term specialty care. The average charge was \$153,854 in LTAC hospitals, \$25,179 in the alcohol and other drug abuse (AODA) hospital, \$15,796 in psychiatric hospitals, \$43,604 in rehabilitation hospitals, and \$26,699 at the state-operated mental health institutes (see Table 2 for details).
- The average hospital stay was 4.5 days. Patients stayed an average of 4.1 days at GMS hospitals, 30.2 days at LTAC hospitals, 13.6 days at the AODA hospital, 6.3 days at psychiatric hospitals, 14.2 days at rehabilitation hospitals, and 24.8 days at the state-operated mental health institutes (see Table 2 for details).
- In 2017, there were 61,683 obstetrical hospitalizations and 64,857 neonatal hospitalizations. There were also 70,491 cardiovascular, 67,822 orthopedic, 40,847 psychiatric, and 16,002 AODA-related hospitalizations in Wisconsin (including rehabilitation hospitals and state-operated mental health institutes). Combined, these accounted for 53 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 55,785 hospitalizations (86 percent of all neonatal hospitalizations) with an average charge of \$4,186 and an average length of stay of 2.1 days (see Table 5 for details).
- Seventy-four percent of all childbirths were classified as vaginal deliveries (APR-DRGs 541, 542, and 560). Vaginal-delivery childbirths accounted for 45,406 hospitalizations at an average charge of \$11,333. In 5.7 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-six percent of all newborns were delivered by Cesarean section, also called C-sections (see Table 4 for details).
- Statewide, 6,355 patients had open-heart surgery at 43 GMS hospitals, with an average length of stay of 7.6 days and an average charge of \$146,168.
- Four GMS hospitals performed a total of 55 heart transplants (APR-DRG 002; MDC 05), with an average charge of \$964,102 and an average length of stay of 39.2 days.
- The most expensive APR-DRGs were Neonate with External Heart and Lung Oxygen Support (APR-DRG 583), at an average charge of \$1,551,847 and Heart and/or Lung Transplant (APR-DRG 002), at an average charge of \$821,861.

Combined, they accounted for only 101 hospitalizations, yet their complexity and length of stay resulted in \$90 million total charges and 3,843 patient days.

- The APR-DRGs generating the most total charges were Knee Replacement (APR-DRG 302), at \$921 million, and Blood Infection/Septicemia (APR-DRG 720), at \$994 million.
- Females accounted for 56 percent of all hospitalizations. Eighteen percent of hospitalizations among females were obstetric-related.
- During 2017, injury-related hospitalizations and ambulatory surgeries accounted for \$5.3 billion in charges at hospitals and FASCs.

Ambulatory Surgery Data

- Ambulatory surgery procedures were performed at 129 Wisconsin GMS hospitals and 77 FASCs in 2017. Data for 1,151,651 cases were collected: 886,476 from hospitals and 265,175 from FASCs.
- Cataract Surgery with Intraocular Lens was the most frequently reported principal ambulatory procedure in 2017, with 71,374 cases.
- The principal procedure producing the highest median charge among the 20 common principal procedures was Left Heart Artery/Ventricle Angiography, at \$15,950. The least expensive among the top 20 most common principal procedures was Injection Eye Drug with a median charge of \$948.

Emergency Department Data

- In 2017, 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 2017 emergency department visits were 425,078 visits (approximately 23 percent of the overall total) related to all types of injury and poisoning.
- Injury-related emergency department visits accounted for \$952 million in charges (approximately 22 percent of the overall total).

Comparison to 2016 Data

- Compared to 2016, the number of hospitalizations in 2017 decreased by less than 0.1 percent while the number of patient days increased by 0.3 percent. The average length of stay increased by 0.4 percent (see Table 1 for details).
- Statewide, the average charge per hospitalization rose from \$33,908 to \$35,429 (4.5 percent) between 2016 and 2017 (see Table 1 for details).
- The average charge per hospitalization increased from \$34,142 to \$35,823 (4.9 percent) at GMS hospitals, from \$151,518 to \$153,854 (1.5 percent) at LTAC hospitals, from \$15,787 to \$15,796 (0.1 percent) at psychiatric hospitals, from \$39,625 to \$43,604 (10.0 percent) at the rehabilitation hospitals, from \$24,828 to \$25,179 (1.4 percent) at the AODA hospital and decreased from \$27,927 to \$26,699 (4.4 percent) at the state-operated mental health institutes (see Table 3 for details).
- The average length of stay increased from 4.12 days to 4.13 days (0.2 percent) at GMS hospitals, from 6.26 days to 6.35 days (0.1 percent) at psychiatric hospitals, and from 13.8 days to 14.2 days (2.6 percent) at the rehabilitation hospitals.
- The average length of stay decreased from 30.9 days to 30.2 days (2.3 percent) at the LTAC hospitals, from 14.1 days to 13.6 days (4.0 percent) at the AODA hospital, and from 26.1 to 24.8 days (4.9 percent) at the state-operated mental health institutes.
- The 40 most frequently performed ambulatory surgery procedures comprised 55 percent of all reported cases, a 1 percent decrease from 2016. Charges for the top 40 procedures combined increased 5.7 percent from 2016. Some fluctuations in utilization may be observed compared to previous years.
- The number of reported emergency department visits increased by 0.1 percent, from 1.841 million in 2016 to 1.844 million in 2017.

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 2017 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 25th 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 25th, 50th (median), and 75th 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-4² 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 50th percentile, or median charge, and half were charged more. Similarly, 95 percent were charged less than the 95th 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 2017 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 2017, 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 \$34,142 in 2016 to \$35,823 in 2017. 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 1.4 percent from 2016 to 2017. The number of hospitalizations decreased 4.4 percent, patient days decreased 8.3 percent, and average length of stay decreased 4.0 percent.

The average charge per stay at LTAC hospitals increased 1.5 percent from 2016 to 2017. The number of hospitalizations decreased 2.6 percent, patient days decreased 4.8 percent, and average length of stay decreased 2.3 percent.

The average charge per stay at psychiatric hospitals increased 0.1 percent from 2016 to 2017. The number of hospitalizations increased 12.8 percent, patient days increased 14.5 percent, and average length of stay increased 1.4 percent.

The average charge per stay at rehabilitation facilities increased 10.0 percent from 2016 to 2017. The number of hospitalizations increased 9.5 percent, patient days increased 12.3 percent, and average length of stay increased 2.6 percent.

The average charge per stay at the state-operated mental health institutes decreased 4.4 percent from 2016 to 2017. The number of hospitalizations increased 3.1 percent, patient days decreased 1.9 percent, and average length of stay decreased 4.9 percent.

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

	2017	2016	% Difference
Number of Hospitalizations	602,083	602,252	0.0%
Total Patient Days	2,695,397	2,686,610	0.3%
Average Stay (days)	4.5	4.5	0.4%
Hospitalizations per 1,000 population	104.2	104.2	0.0%
Patient Days per 1,000 population	466.5	465.0	0.3%
Total Charges	\$21,331,149,334	\$20,421,161,025	4.5%
Average Charge per Hospitalization	\$35,429	\$33,908	4.5%

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 2017 there were 31 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, 2017

Type	Number of Hospitals	Number of Hospitalizations	Patient Days	Average Stay (days)	Average Charge per Day	Average Charge per Stay
AODA	1	130	1,763	13.6	\$1,857	\$25,179
GMS	129	571,210	2,358,056	4.1	\$8,678	\$35,823
LTAC	6	1,999	60,366	30.2	\$5,095	\$153,854
PSYCH	12	22,507	142,866	6.3	\$2,489	\$15,796
REHAB	3	2,118	30,037	14.2	\$3,075	\$43,604
STATE	2	4,119	102,309	24.8	\$1,075	\$26,699
TOTAL	153	602,083	2,695,397	4.5	\$7,914	\$35,429

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 2017 there were 31 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, 2016 to 2017

Type	Number of Hospitalizations	Patient Days	Average Length of Stay	Average Charge per Stay
AODA	-4.4%	-8.3%	-4.0%	1.4%
GMS	-0.5%	-0.3%	0.2%	4.9%
LTAC	-2.6%	-4.8%	-2.3%	1.5%
PSYCH	12.8%	14.5%	1.4%	0.1%
REHAB	9.5%	12.3%	2.6%	10.0%
STATE	3.1%	-1.9%	-4.9%	-4.4%
TOTAL	0.0%	0.3%	0.4%	4.5%

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 2017 there were 31 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 2017.

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 2017, 61,683 women delivered babies (single and multiple births) in Wisconsin hospitals, down from 63,561 in 2016.

Most childbirths (69.4 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 5.7 percent of childbirths.

Statewide, the rate for Cesarean sections, also called C-sections (APR-DRG 540) increased slightly to 26.4 percent of childbirths, from 26.0 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, Theda Clark Medical Center, Neenah, had the highest C-section rate at 33.7 percent of all childbirths, Ascension St. Clare's Hospital, Weston, had a rate of 31.9 percent, and Aurora Medical Center, Kenosha, had a rate of 31.7 percent.

APR-DRG	Description	Number of Hospitalizations	Average Stay (days)	Average Charge	Median Charge
540	Cesarean Delivery	16,277	3.7	\$22,382	\$19,479
541	Vaginal Delivery with Sterilization	1,526	2.4	\$18,576	\$16,503
542	Vaginal Delivery with Proc Except Sterilization	1,061	2.5	\$13,576	\$11,718
560	Vaginal Delivery	42,819	2.2	\$11,019	\$9,859
	Total Childbirths	61,683	2.6	\$14,248	\$11,921

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 64,857 in 2017 from 66,584 in 2016.

APR-DRG	Description	Number of Hospitalizations	Average Stay (days)	Average Charge	Median Charge
580	Neonate, Transferred <5 Days Old, Not Born Here	146	1.4	\$7,640	\$7,031
581	Neonate, Transferred <5 Days Old, Born Here	1,446	1.2	\$3,598	\$1,975
583	Neonate with External Heart and Lung Oxygen Support	9	97.1	\$1,551,847	\$1,029,981
588	Neonate Birthwt <1500g with Major Procedure	52	100.7	\$792,422	\$508,745
589	Neonate Birthwt <500g or Gestational Age <24 weeks	96	27.6	\$195,735	\$1,260
591	Neonate Birthwt 500-749g without Major Procedure	74	74.6	\$466,673	\$450,691
593	Neonate Birthwt 750-999g without Major Procedure	115	70.1	\$396,764	\$375,993
602	Neonate Birthwt 1000-1249g with Respiratory Distress Syndrome	113	59.8	\$317,567	\$286,540
603	Other Neonate Birthwt 1000-1249g	19	37.9	\$161,591	\$154,356
607	Neonate Birthwt 1250-1499g with Respiratory Distress Syndrome	154	44.3	\$210,675	\$184,132
608	Other Neonate Birthwt 1250-1499g	64	28.2	\$120,808	\$94,875
609	Neonate Birthwt 1500-2499g with Major Procedure	55	44.8	\$397,784	\$181,118
611	Neonate Birthwt 1500-1999g with Major Anomaly	104	29.2	\$160,533	\$123,354
612	Neonate Birthwt 1500-1999g with Respiratory Distress Syndrome	285	29.1	\$133,479	\$116,363
613	Neonate Birthwt 1500-1999g with Congenital Or Perinatal Infections	6	19.0	\$71,375	\$60,605
614	Other Neonate Birthwt 1500-1999g	463	15.2	\$59,237	\$48,300
621	Neonate Birthwt 2000-2499g with Major Anomaly	93	18.3	\$98,714	\$68,999
622	Neonate Birthwt 2000-2499g with Respiratory Distress Syndrome	254	18.9	\$88,807	\$73,645
623	Neonate Birthwt 2000-2499g with Congenital Or Perinatal Infections	14	13.4	\$47,403	\$48,095
625	Neonate Birthwt 2000-2499g with Other Significant Condition	322	13.5	\$49,907	\$40,448
626	Normal Newborn Birthweight 2000g - 2499g	1,458	4.7	\$13,522	\$5,403
630	Neonate Birthwt >2499g with Major Cardiovascular Procedure	87	42.7	\$553,071	\$260,735
631	Neonate Birthwt >2499g with Other Major Procedure	132	21.5	\$197,224	\$83,204
633	Neonate Birthwt >2499g with Major Anomaly	886	6.6	\$36,017	\$6,600
634	Neonate Birthwt >2499g with Respiratory Distress Syndrome	896	10.6	\$58,230	\$36,513
636	Neonate Birthwt >2499g with Congenital or Perinatal Infections	148	6.1	\$29,686	\$17,282
639	Neonate Birthwt >2499g with Other Significant Condition	1,581	7.8	\$27,595	\$11,824
640	Normal Newborn, Birthweight 2500g+	55,785	2.1	\$4,186	\$3,581
Total Neonatal Hospitalizations		64,857	3.6	\$13,137	\$3,743

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 2017, cardiovascular diagnoses accounted for 70,491 hospitalizations (up from 68,309 in 2016) (not including patients treated at rehabilitation hospitals or state-operated mental health institutes). These patients represented 11.7 percent of all hospitalizations and 18.8 percent of all inpatient charges, compared to 11.3 percent and 18.3 percent, respectively, the year before. Charges for cardiovascular-related hospitalizations in 2017 totaled \$4.0 billion, up from \$3.7 billion the previous year.

Forty-three GMS hospitals (three less than 2016) performed open-heart surgery (APR-DRGs 162-163, and 165-167) on 6,355 patients, a 2.7 percent decrease from 2016.

The largest number of open-heart surgeries (1,211) was performed by Aurora St. Luke's Medical Center in Milwaukee.

Four hospitals performed a total of 55 heart transplants in 2017. These four urban teaching hospitals performed all of the heart transplants in 2017. Aurora St. Luke's Medical Center, Milwaukee, performed 19 transplants, University of Wisconsin Hospital and Clinics, Madison, performed 14, Froedtert Memorial Lutheran Hospital, Milwaukee performed 12, and Children's Hospital of Wisconsin, Milwaukee, performed 10.

Table 6. Cardiovascular Hospitalizations (MDC 05) in Wisconsin, 2017

APR-DRG	Description	Number of Hospitalizations	Average Stay (days)	Average Charge	Median Charge
002	Heart Transplant	55	39.2	\$964,102	\$575,225
161	Defibrillator and Heart Assist Implant	680	9.1	\$237,937	\$166,648
162	Cardiac valve procedures w AMI or complex PDX	282	12.7	\$247,724	\$206,848
163	Cardiac valve procedures w/o AMI or complex PDX	1,698	7.4	\$156,430	\$139,192
165	Coronary bypass w AMI or complex PDX	1,151	9.2	\$158,819	\$147,607
166	Coronary bypass w/o AMI or complex PDX	2,291	6.8	\$126,079	\$114,621
167	Other cardiothoracic & thoracic vascular procedures	936	6.5	\$130,815	\$103,655
170	Pacemaker Implant with Heart Attack, Heart Failure or Shock	67	7.5	\$77,392	\$70,413
171	Pacemaker Implant without Heart Attack, Heart Failure or Shock	1,616	3.7	\$57,759	\$50,132
174	Percutaneous coronary intervention w AMI	5,615	3.0	\$69,008	\$60,931
175	Percutaneous coronary intervention w/o AMI	4,026	3.4	\$100,392	\$84,566
176	Pacemaker/Defibrillator Replacement	156	5.2	\$113,383	\$94,381
177	Pacemaker/Defibrillator Revision Except Replacement	135	5.3	\$78,388	\$46,046
190	Circulatory Disorders with Heart Attack	4,020	3.4	\$31,151	\$24,827
191	Cardiac catheterization for coronary artery disease	993	2.2	\$32,175	\$28,882
192	Cardiac catheterization for other non-coronary conditions	3,676	4.3	\$48,032	\$37,386
194	Heart Failure	17,273	4.4	\$26,260	\$20,341
196	Cardiac arrest & shock	329	4.1	\$47,906	\$34,036
198	Chest Pain with Angina Pectoris or Coronary Atherosclerosis	1,278	2.0	\$17,749	\$15,200
199	Hypertension	1,729	2.6	\$21,226	\$17,635
200	Heart Structural and Valve Disorders	215	3.9	\$25,934	\$17,553
201	Heart Abnormal Rhythm and Conduction Disorders	9,060	2.8	\$19,846	\$15,380
203	Chest Pain	738	1.7	\$17,472	\$15,926
204	Fainting and Collapse	1,689	2.7	\$21,950	\$18,874
206	Malfunction/ Reaction/Complication of Heart Device or Procedure	588	5.5	\$43,825	\$27,531
	All Other Cardiovascular Hospitalizations	10,195	5.8	\$81,349	\$52,240
	Total Cardiovascular Hospitalizations	70,491	4.3	\$56,969	\$32,165

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 67,822 hospitalizations in 2017 (not including patients treated at rehabilitation hospitals or state-operated mental health institutes). Orthopedic patients accounted for 11.3 percent of all hospitalizations and 16.2 percent of total inpatient charges.

Knee Joint Replacement (APR-DRG 302) was the fourth-most frequent reason for hospitalization statewide and generated the second highest charges of any APR-DRG in 2017. Hip Joint Replacement (APR-DRG 301) was the seventh-most frequent reason for hospitalization statewide and generated the third-highest total charges of all APR-DRGs. (See Tables 10 and 12).

APR-DRG	Description	Number of Hospitalizations	Average Stay (days)	Average Charge	Median Charge
301	Hip Replacement	13,716	2.4	\$49,256	\$44,648
302	Knee Replacement	20,205	2.0	\$45,559	\$42,258
303	Dorsal and Lumbar Fusion with Principal Diagnosis of Back Curvature	274	4.9	\$148,770	\$123,131
304	Dorsal and Lumbar Fusion Without Principal Diagnosis of Back Curvature	4,000	3.4	\$96,384	\$81,699
305	Amputation of Lower Limb Except Toes	1,145	9.3	\$74,661	\$52,138
308	Hip & femur fracture repair	4,236	4.8	\$51,240	\$45,015
309	Other significant hip & femur surgery	780	5.0	\$68,014	\$55,169
310	Back/Neck Procedures Except Dorsal and Lumbar Fusion	922	2.9	\$41,611	\$35,569
313	Other Knee/Lower Leg Surgery	2,728	4.0	\$56,023	\$44,923
314	Foot/Toe Surgery	1,196	6.1	\$51,017	\$39,260
315	Shoulder, upper arm & forearm procedures except joint replacement	2,418	2.4	\$55,311	\$50,132
316	Hand/Wrist Surgery	365	3.7	\$41,421	\$30,521
321	Upper Spinal Fusion	2,146	3.3	\$70,816	\$58,091
340	Thigh Fracture	630	3.5	\$19,039	\$14,013
341	Pelvis Fracture/Hip Dislocation	550	3.8	\$19,787	\$16,559
342	Fracture or Dislocation Except Thigh, Pelvis, Back	1,158	3.6	\$22,739	\$18,475
343	Musculoskeletal Malignancy	475	6.0	\$44,695	\$33,575
347	Other Back/Neck Disorders, Fractures, Injuries	2,793	3.9	\$25,333	\$20,509
351	Other Musculoskeletal System and Connective Tissue Diagnoses	2,496	3.9	\$23,062	\$17,508
	All Other Orthopedic Hospitalizations	5,589	5.6	\$57,311	\$39,534
	Total Orthopedic Hospitalizations	67,822	3.3	\$50,870	\$43,025

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 37,154 psychiatric inpatients in 2017 (up from 35,979 in 2016). They represented 6.2 percent of all hospitalizations and 2.8 percent of total inpatient charges.

The number of psychiatric hospitalizations increased by 3.3 percent from 2016, and patient days increased by 5.2 percent.

The average charge for psychiatric hospitalizations increased by 3.3 percent in 2017 to \$16,100, from \$15,593 the year before.

APR-DRG	Description	Number of Hospitalizations	Average Stay (days)	Average Charge	Median Charge
740	Mental Illness Diagnosis with O.R. Procedure	71	11.9	\$55,494	\$29,491
750	Schizophrenia	4,362	9.6	\$20,757	\$13,842
751	Psychoses	13,686	5.6	\$14,857	\$12,252
752	Personality and Impulse Control Disorders	459	4.1	\$11,357	\$8,768
753	Bipolar Disorders	8,854	6.0	\$15,317	\$12,441
754	Depression	4,347	4.2	\$11,025	\$8,417
755	Neuroses Other Than Depression	1,630	4.3	\$11,657	\$8,159
756	Acute Adjust React Psychosocial Dysfunction	1,455	4.1	\$16,837	\$12,513
757	Organic Disturbances and Mental Retardation	673	9.8	\$30,460	\$20,062
758	Behavioral disorders	734	6.7	\$19,047	\$18,318
759	Eating Disorders	418	14.6	\$49,184	\$38,351
760	Other Mental Disorders	465	8.8	\$28,130	\$19,252
Total Psychiatric Hospitalizations		37,154	6.1	\$16,100	\$12,187

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 15,694 hospitalizations in 2017 in GMS, psychiatric, and AODA facilities, up from 15,525 in 2016. The state's only dedicated AODA hospital, Libertas Center in Green Bay, treated 130 inpatients in 2017, a 4.4 percent decrease from its 2016 total of 136. The average charge at Libertas Center increased 1.4 percent, to \$25,179 from \$24,828 in 2016, while the average length of stay decreased 3.5 percent, to 13.6 days from 14.1 days.

APR-DRG	Description	Number of Hospitalizations	Average Stay (days)	Average Charge	Median Charge
770	Substance Abuse/Dependence, Left Against Medical Advice	1,264	1.9	\$9,247	\$6,667
772	Substance Abuse/Dependence with Rehab and/or Detox	353	6.3	\$14,052	\$9,383
773	Opioid Abuse/Dependence	3,849	3.9	\$12,638	\$11,988
774	Cocaine Abuse/Dependence	595	3.3	\$13,178	\$11,141
775	Alcohol Abuse/Dependence	8,989	3.5	\$14,751	\$10,688
776	Other Substance Abuse/Dependence	589	4.1	\$11,458	\$8,209
	All Other AODA Hospitalizations	55	13.7	\$87,152	\$52,153
	Total AODA Hospitalizations	15,694	3.6	\$13,845	\$10,488

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 37.5 percent of all hospitalizations and 22.3 percent of all inpatient charges at GMS, LTAC, psychiatric and AODA facilities in 2017.

Birth-related hospitalizations (APR-DRGs 540, 541, 542, and 560 and MDC 15) accounted for 21.2 percent of all hospitalizations at these facilities, but only 8.1 percent of charges.

The average hospital stays for patients with the most frequently reported APR-DRGs were relatively short (4.4 days or less for all but two APR-DRGs). Average charges were also relatively low for the most common APR-DRGs (\$21,182) compared to the average charge for all inpatients at GMS, LTAC, psychiatric, and AODA facilities (\$36,019).

APR-DRG	Description	Number of Hospitalizations	Average Stay (days)	Average Charge	Median Charge
640	Normal Newborn, Birthweight 2500g+	55,785	2.1	\$4,186	\$3,581
560	Vaginal Delivery	42,819	2.2	\$11,019	\$9,859
720	Blood Infection/Septicemia	25,191	5.3	\$39,442	\$26,686
302	Knee Replacement	20,205	2.0	\$45,559	\$42,258
194	Heart Failure	17,273	4.4	\$26,260	\$20,341
540	Cesarean Delivery	16,277	3.7	\$22,382	\$19,479
301	Hip Replacement	13,716	2.4	\$49,256	\$44,648
751	Psychoses	13,686	5.6	\$14,857	\$12,252
140	Chronic Obstructive Pulmonary Disease	10,959	3.7	\$22,424	\$18,046
139	Pneumonia	10,072	3.8	\$22,321	\$17,590
Above Hospitalizations Total		225,983	3.2	\$21,182	\$13,511

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 2017 based on the average charge accounted for only 0.2 percent of all hospitalizations but 3.4 percent of total inpatient charges among GMS, LTAC, psychiatric, and AODA hospitals in 2017 (see Table 11).

These APR-DRGs required specialized treatment and long hospital stays. Together, they represented only 1,226 hospitalizations.

APR-DRG	Description	Number of Hospitalizations	Average Stay (days)	Average Charge	Median Charge
583	Neonate with External Heart and Lung Oxygen Support	9	97.1	\$1,551,847	\$1,029,981
002	Heart and/or Lung Transplant	92	32.3	\$821,861	\$559,404
588	Neonate Birthwt <1500g with Major Procedure	52	100.7	\$792,422	\$508,745
001	Liver Transplant	186	27.3	\$688,819	\$456,333
630	Neonate Birthwt >2499g with Major Cardiovascular Procedure	87	42.7	\$553,071	\$260,735
004		629	36.5	\$542,312	\$408,328
009		30	18.4	\$533,867	\$433,968
591	Neonate Birthwt 500-749g without Major Procedure	74	74.6	\$466,673	\$450,691
841	Burns, 3rd Degree with Skin Graft	12	31.1	\$424,060	\$384,822
609	Neonate Birthwt 1500-2499g with Major Procedure	55	44.8	\$397,784	\$181,118
Above Hospitalizations Total		1,226	40.6	\$591,886	\$421,182
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 25.4 percent of all hospitalizations and 25.5 percent of total charges among GMS, LTAC, psychiatric, and AODA hospitals in 2017 (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).

APR-DRG	Description	Number of Hospitalizations	Average Stay (days)	Average Charge	Total Charges
720	Blood Infection/Septicemia	25,191	5.3	\$39,442	\$993,575,437
302	Knee Replacement	20,205	2.0	\$45,559	\$920,514,805
301	Hip Replacement	13,716	2.4	\$49,256	\$675,600,282
560	Vaginal Delivery	42,819	2.2	\$11,019	\$471,825,380
194	Heart Failure	17,273	4.4	\$26,260	\$453,584,967
710	Infectious & parasitic diseases including HIV w O.R. procedure	3,778	11.2	\$109,258	\$412,775,693
175	Percutaneous coronary intervention w/o AMI	4,026	3.4	\$100,392	\$404,176,470
174	Percutaneous coronary intervention w AMI	5,615	3.0	\$69,008	\$387,482,132
304	Dorsal and Lumbar Fusion Without Principal Diagnosis of Back Curvature	4,000	3.4	\$96,384	\$385,535,017
540	Cesarean Delivery	16,277	3.7	\$22,382	\$364,306,565
Above Hospitalizations Total		152,900	3.4	\$35,771	

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 2017 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, 2017

Injury Category	Number of Cases	Rate per 100,000 population	Total Charges
Cut/Pierce	3,268	56.4	\$52,124,655
Accidental	2,422	41.8	\$33,018,214
Self-Inflicted	682	11.8	\$12,587,896
Assault	145	2.5	\$6,324,048
Undetermined	19	0.3	\$194,498
Drown/Submersion	27	0.5	\$1,945,332
Accidental	24	0.4	\$1,682,683
Self-Inflicted/Assault/Undetermined	3	0.1	\$262,649
Falls	33,163	572.2	\$1,130,368,315
Accidental	33,129	571.6	\$1,126,872,868
Self-Inflicted/Assault/Undetermined	34	0.6	\$3,495,447
Fire/Flames	638	11.0	\$18,331,365
Accidental	614	10.6	\$16,976,771
Self-Inflicted/Assault/Undetermined	24	0.4	\$1,354,594
Firearms	664	11.5	\$55,635,100
Accidental	363	6.3	\$25,492,895
Self-Inflicted	64	1.1	\$7,184,140
Assault	219	3.8	\$20,899,481
Undetermined	18	0.3	\$2,058,585
Hot Objects/Scalds	1,565	27.0	\$35,535,793
Accidental	933	16.1	\$17,657,913
Self-Inflicted/Assault/Undetermined	632	10.9	\$17,877,881
Machinery	917	15.8	\$20,743,860
Motor Veh Traffic	4,087	70.5	\$278,330,943
Accidental	4,065	70.1	\$277,296,158
Self-Inflicted/Assault/Undetermined	22	0.4	\$1,034,785
Oth Pedal Cycle	829	14.3	\$23,154,745
Oth Mot Veh Nontraffic	1,119	19.3	\$52,517,411
Oth Transport	333	5.7	\$11,797,258
Natural/Environmental	27,681	477.6	\$602,667,476
Overexertion	4,126	71.2	\$73,678,384
Poisoning	45,624	787.2	\$2,853,980,706
Accidental	1,857	32.0	\$77,284,508
Self-Inflicted	2,093	36.1	\$40,888,526
Assault	3	0.1	\$19,838
Undetermined	41,671	719.0	\$2,735,787,834
Striking/Struck By	4,332	74.7	\$88,063,579
Accidental	3,673	63.4	\$69,282,363
Assault	659	11.4	\$18,781,216
Other Injury	947	16.3	\$17,469,045
Accidental	837	14.4	\$13,954,269
Self-Inflicted	23	0.4	\$1,505,565
Assault	71	1.2	\$1,754,545
Undetermined	9	0.2	\$129,426
Others	7	0.1	\$125,240
Total Injuries	129,320	2,231.4	\$5,316,343,967
Total Self-Inflicted	3,223	55.6	\$76,294,330
Total Assaults	1,112	19.2	\$49,206,581

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, 2017

Injury Category	Number of Cases	Rate per 100,000 population	Total Charges
Cut/Pierce	1,214	106.5	\$11,124,655
Accidental	1,052	92.3	\$7,336,970
Self-Inflicted	130	11.4	\$2,702,920
Assault	28	2.5	\$1,026,852
Undetermined	4	0.4	\$57,913
Drown/Submersion	7	0.6	\$1,164,807
Accidental	7	0.6	\$1,164,807
Self-Inflicted/Assault/Undetermined	0	N/A	N/A
Falls	7,896	693.0	\$249,968,576
Accidental	7,889	692.4	\$249,555,215
Self-Inflicted/Assault/Undetermined	7	0.6	\$413,361
Fire/Flames	492	43.2	\$5,384,517
Accidental	485	42.6	\$5,332,882
Self-Inflicted/Assault/Undetermined	7	0.6	\$51,635
Firearms	143	12.6	\$11,294,431
Accidental	87	7.6	\$5,204,474
Self-Inflicted	21	1.8	\$2,560,657
Assault	31	2.7	\$2,983,050
Undetermined	4	0.4	\$546,249
Hot Objects/Scalds	747	65.6	\$7,987,957
Accidental	685	60.1	\$6,006,753
Self-Inflicted/Assault/Undetermined	62	5.4	\$1,981,204
Machinery	283	24.8	\$5,851,693
Motor Veh Traffic	1,008	88.5	\$78,928,325
Accidental	1,001	87.9	\$78,264,914
Self-Inflicted/Assault/Undetermined	7	0.6	\$663,412
Oth Pedal Cycle	303	26.6	\$6,442,446
Oth Mot Veh Nontraffic	276	24.2	\$15,830,858
Oth Transport	75	6.6	\$2,197,910
Natural/Environmental	7,512	659.3	\$128,555,117
Overexertion	765	67.1	\$12,984,924
Poisoning	9,352	820.8	\$645,651,238
Accidental	372	32.6	\$15,174,989
Self-Inflicted	484	42.5	\$10,353,646
Assault	2	0.2	\$19,282
Undetermined	8,494	745.5	\$620,103,322
Striking/Struck By	1,467	128.8	\$17,557,463
Accidental	1,346	118.1	\$14,559,684
Assault	121	10.6	\$2,997,779
Other Injury	299	26.2	\$4,314,383
Accidental	272	23.9	\$3,272,691
Self-Inflicted	8	0.7	\$620,584
Assault	13	1.1	\$307,854
Undetermined	5	0.4	\$81,871
Others	1	0.1	\$31,383
Total Injuries	31,839	2,794.4	\$1,205,239,300
Total Self-Inflicted	708	62.1	\$18,642,029
Total Assaults	198	17.4	\$7,403,965

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, 2017

Injury Category	Number of Cases	Rate per 100,000 population	Total Charges
Cut/Pierce	344	31.5	\$6,783,195
Accidental	237	21.7	\$4,718,118
Self-Inflicted	91	8.3	\$1,641,034
Assault	12	1.1	\$354,775
Undetermined	4	0.4	\$69,268
Drown/Submersion	2	0.2	\$86,967
Accidental	2	0.2	\$86,967
Self-Inflicted/Assault/Undetermined	0	N/A	N/A
Falls	5,571	510.2	\$208,448,109
Accidental	5,569	510.1	\$208,393,457
Self-Inflicted/Assault/Undetermined	2	0.2	\$54,652
Fire/Flames	13	1.2	\$311,449
Accidental	9	0.8	\$238,239
Self-Inflicted/Assault/Undetermined	4	0.4	\$73,211
Firearms	37	3.4	\$997,817
Accidental	22	2.0	\$342,914
Self-Inflicted	5	0.5	\$159,215
Assault	9	0.8	\$487,984
Undetermined	1	0.1	\$7,704
Hot Objects/Scalds	81	7.4	\$3,761,255
Accidental	24	2.2	\$1,096,528
Self-Inflicted/Assault/Undetermined	57	5.2	\$2,664,727
Machinery	99	9.1	\$1,879,760
Motor Veh Traffic	416	38.1	\$17,699,316
Accidental	416	38.1	\$17,699,316
Self-Inflicted/Assault/Undetermined	0	N/A	N/A
Oth Pedal Cycle	72	6.6	\$2,094,170
Oth Mot Veh Nontraffic	93	8.5	\$3,662,080
Oth Transport	34	3.1	\$1,084,315
Natural/Environmental	4,356	399.0	\$113,814,801
Overexertion	679	62.2	\$14,178,864
Poisoning	7,544	691.0	\$334,528,814
Accidental	269	24.6	\$11,000,895
Self-Inflicted	275	25.2	\$5,801,519
Assault	0	N/A	N/A
Undetermined	7,000	641.1	\$317,726,400
Striking/Struck By	499	45.7	\$11,905,876
Accidental	429	39.3	\$10,218,798
Assault	70	6.4	\$1,687,078
Other Injury	136	12.5	\$2,930,663
Accidental	123	11.3	\$2,648,213
Self-Inflicted	4	0.4	\$63,515
Assault	6	0.5	\$177,595
Undetermined	1	0.1	\$5,807
Others	2	0.2	\$35,533
Total Injuries	19,976	1,829.6	\$724,167,453
Total Self-Inflicted	427	39.1	\$10,038,834
Total Assaults	98	9.0	\$2,723,417

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, 2017

Injury Category	Number of Cases	Rate per 100,000 population	Total Charges
Cut/Pierce	535	56.2	\$18,381,409
Accidental	332	34.9	\$10,991,295
Self-Inflicted	125	13.1	\$3,504,152
Assault	76	8.0	\$3,863,195
Undetermined	2	0.2	\$22,766
Drown/Submersion	5	0.5	\$290,482
Accidental	4	0.4	\$185,242
Self-Inflicted/Assault/Undetermined	1	0.1	\$105,241
Falls	6,497	682.4	\$323,700,744
Accidental	6,489	681.6	\$321,679,344
Self-Inflicted/Assault/Undetermined	8	0.8	\$2,021,400
Fire/Flames	97	10.2	\$12,097,028
Accidental	90	9.5	\$11,006,787
Self-Inflicted/Assault/Undetermined	7	0.7	\$1,090,241
Firearms	401	42.1	\$37,777,686
Accidental	206	21.6	\$18,654,174
Self-Inflicted	17	1.8	\$2,391,539
Assault	167	17.5	\$15,356,932
Undetermined	11	1.2	\$1,375,042
Hot Objects/Scalds	375	39.4	\$17,118,884
Accidental	149	15.6	\$9,612,862
Self-Inflicted/Assault/Undetermined	226	23.7	\$7,506,022
Machinery	120	12.6	\$5,719,888
Motor Veh Traffic	1,231	129.3	\$114,965,832
Accidental	1,227	128.9	\$114,748,239
Self-Inflicted/Assault/Undetermined	4	0.4	\$217,593
Oth Pedal Cycle	138	14.5	\$7,075,104
Oth Mot Veh Nontraffic	131	13.8	\$8,443,228
Oth Transport	47	4.9	\$3,196,708
Natural/Environmental	5,512	578.9	\$168,408,779
Overexertion	444	46.6	\$11,928,546
Poisoning	14,050	1,475.7	\$1,387,306,825
Accidental	580	60.9	\$32,852,700
Self-Inflicted	331	34.8	\$8,676,213
Assault	0	N/A	N/A
Undetermined	13,139	1,380.0	\$1,345,777,913
Striking/Struck By	868	91.2	\$29,773,116
Accidental	600	63.0	\$19,646,123
Assault	268	28.1	\$10,126,994
Other Injury	171	18.0	\$5,397,205
Accidental	126	13.2	\$3,707,847
Self-Inflicted	5	0.5	\$651,262
Assault	37	3.9	\$1,008,895
Undetermined	2	0.2	\$7,372
Others	1	0.1	\$21,829
Total Injuries	30,622	3,216.3	\$2,151,581,466
Total Self-Inflicted	555	58.3	\$21,008,461
Total Assaults	555	58.3	\$31,620,176

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, 2017

Injury Category	Number of Cases	Rate per 100,000 population	Total Charges
Cut/Pierce	288	46.5	\$2,910,975
Accidental	205	33.1	\$1,867,803
Self-Inflicted	73	11.8	\$766,908
Assault	9	1.5	\$266,571
Undetermined	1	0.2	\$9,693
Drown/Submersion	1	0.2	\$34,166
Accidental	1	0.2	\$34,166
Self-Inflicted/Assault/Undetermined	0	N/A	N/A
Falls	2,665	430.7	\$56,090,945
Accidental	2,662	430.2	\$56,039,194
Self-Inflicted/Assault/Undetermined	3	0.5	\$51,751
Fire/Flames	14	2.3	\$114,952
Accidental	13	2.1	\$108,498
Self-Inflicted/Assault/Undetermined	1	0.2	\$6,454
Firearms	18	2.9	\$969,785
Accidental	9	1.5	\$170,857
Self-Inflicted	4	0.6	\$358,341
Assault	5	0.8	\$440,586
Undetermined	0	N/A	N/A
Hot Objects/Scalds	70	11.3	\$879,765
Accidental	12	1.9	\$185,524
Self-Inflicted/Assault/Undetermined	58	9.4	\$694,242
Machinery	105	17.0	\$1,208,163
Motor Veh Traffic	293	47.4	\$12,379,644
Accidental	289	46.7	\$12,345,826
Self-Inflicted/Assault/Undetermined	4	0.6	\$33,818
Oth Pedal Cycle	70	11.3	\$1,350,770
Oth Mot Veh Nontraffic	102	16.5	\$2,400,896
Oth Transport	46	7.4	\$1,536,971
Natural/Environmental	1,910	308.7	\$31,024,789
Overexertion	529	85.5	\$6,235,771
Poisoning	2,678	432.8	\$66,820,944
Accidental	129	20.8	\$3,738,822
Self-Inflicted	272	44.0	\$3,262,982
Assault	0	N/A	N/A
Undetermined	2,277	368.0	\$59,819,139
Striking/Struck By	375	60.6	\$5,563,653
Accidental	350	56.6	\$5,265,873
Assault	25	4.0	\$297,780
Other Injury	77	12.4	\$986,900
Accidental	70	11.3	\$823,829
Self-Inflicted	3	0.5	\$116,812
Assault	4	0.6	\$46,259
Undetermined	0	N/A	N/A
Others	0	N/A	N/A
	Total Injuries	1,493.5	\$190,509,088
	Total Self-Inflicted	66.7	\$5,243,694
	Total Assaults	6.9	\$1,051,196

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, 2017

Injury Category	Number of Cases	Rate per 100,000 population	Total Charges
Cut/Pierce	314	50.0	\$5,065,161
Accidental	191	30.4	\$2,738,993
Self-Inflicted	113	18.0	\$1,854,818
Assault	9	1.4	\$469,419
Undetermined	1	0.2	\$1,931
Drown/Submersion	3	0.5	\$61,349
Accidental	3	0.5	\$61,349
Self-Inflicted/Assault/Undetermined	0	N/A	N/A
Falls	3,483	554.7	\$101,859,750
Accidental	3,481	554.4	\$101,779,941
Self-Inflicted/Assault/Undetermined	2	0.3	\$79,809
Fire/Flames	6	1.0	\$72,046
Accidental	5	0.8	\$56,885
Self-Inflicted/Assault/Undetermined	1	0.2	\$15,161
Firearms	25	4.0	\$1,861,170
Accidental	12	1.9	\$267,480
Self-Inflicted	10	1.6	\$1,475,205
Assault	2	0.3	\$82,379
Undetermined	1	0.2	\$36,105
Hot Objects/Scalds	181	28.8	\$3,811,864
Accidental	23	3.7	\$221,455
Self-Inflicted/Assault/Undetermined	158	25.2	\$3,590,408
Machinery	84	13.4	\$1,218,758
Motor Veh Traffic	372	59.2	\$16,233,498
Accidental	370	58.9	\$16,191,584
Self-Inflicted/Assault/Undetermined	2	0.3	\$41,914
Oth Pedal Cycle	90	14.3	\$2,396,383
Oth Mot Veh Nontraffic	120	19.1	\$4,861,142
Oth Transport	37	5.9	\$974,468
Natural/Environmental	3,854	613.8	\$77,897,768
Overexertion	652	103.8	\$11,499,968
Poisoning	3,600	573.3	\$143,855,655
Accidental	157	25.0	\$5,855,333
Self-Inflicted	229	36.5	\$4,428,543
Assault	0	N/A	N/A
Undetermined	3,214	511.9	\$133,571,779
Striking/Struck By	403	64.2	\$8,250,096
Accidental	348	55.4	\$7,164,810
Assault	55	8.8	\$1,085,285
Other Injury	82	13.1	\$1,144,780
Accidental	78	12.4	\$1,052,352
Self-Inflicted	2	0.3	\$41,669
Assault	1	0.2	\$31,880
Undetermined	0	N/A	N/A
Others	1	0.2	\$18,879
Total Injuries	13,306	2,119.1	\$381,063,854
Total Self-Inflicted	379	60.4	\$8,296,638
Total Assaults	68	10.8	\$1,681,956

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, 2017

Injury Category	Number of Cases	Rate per 100,000 population	Total Charges
Cut/Pierce	251	51.5	\$3,101,826
Accidental	163	33.4	\$1,972,731
Self-Inflicted	82	16.8	\$964,661
Assault	4	0.8	\$154,370
Undetermined	2	0.4	\$10,063
Drown/Submersion	2	0.4	\$155,069
Accidental	1	0.2	\$11,863
Self-Inflicted/Assault/Undetermined	1	0.2	\$143,206
Falls	2,336	479.1	\$61,591,293
Accidental	2,331	478.1	\$61,376,309
Self-Inflicted/Assault/Undetermined	5	1.0	\$214,984
Fire/Flames	3	0.6	\$66,971
Accidental	3	0.6	\$66,971
Self-Inflicted/Assault/Undetermined	0	N/A	N/A
Firearms	13	2.7	\$451,630
Accidental	10	2.1	\$316,013
Self-Inflicted	2	0.4	\$130,128
Assault	1	0.2	\$5,489
Undetermined	0	N/A	N/A
Hot Objects/Scalds	40	8.2	\$595,309
Accidental	19	3.9	\$115,496
Self-Inflicted/Assault/Undetermined	21	4.3	\$479,814
Machinery	87	17.8	\$1,036,518
Motor Veh Traffic	224	45.9	\$9,714,751
Accidental	223	45.7	\$9,709,481
Self-Inflicted/Assault/Undetermined	1	0.2	\$5,270
Oth Pedal Cycle	43	8.8	\$856,242
Oth Mot Veh Nontraffic	93	19.1	\$4,060,369
Oth Transport	25	5.1	\$436,958
Natural/Environmental	1,771	363.2	\$27,268,837
Overexertion	362	74.2	\$5,774,799
Poisoning	2,779	570.0	\$97,518,337
Accidental	120	24.6	\$3,542,380
Self-Inflicted	165	33.8	\$2,357,095
Assault	0	N/A	N/A
Undetermined	2,494	511.5	\$91,618,862
Striking/Struck By	275	56.4	\$5,018,855
Accidental	224	45.9	\$4,068,570
Assault	51	10.5	\$950,285
Other Injury	80	16.4	\$951,247
Accidental	75	15.4	\$885,987
Self-Inflicted	0	N/A	N/A
Assault	3	0.6	\$47,644
Undetermined	0	N/A	N/A
Others	2	0.4	\$17,616
Total Injuries	8,384	1,719.6	\$218,599,012
Total Self-Inflicted	274	56.2	\$4,208,199
Total Assaults	61	12.5	\$1,175,404

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, 2017

Injury Category	Number of Cases	Rate per 100,000 population	Total Charges
Cut/Pierce	131	47.8	\$2,089,040
Accidental	99	36.1	\$1,459,307
Self-Inflicted	26	9.5	\$553,494
Assault	3	1.1	\$74,917
Undetermined	3	1.1	\$1,322
Drown/Submersion	3	1.1	\$59,654
Accidental	2	0.7	\$45,452
Self-Inflicted/Assault/Undetermined	1	0.4	\$14,203
Falls	1,550	565.6	\$42,073,513
Accidental	1,548	564.9	\$41,527,690
Self-Inflicted/Assault/Undetermined	2	0.7	\$545,824
Fire/Flames	3	1.1	\$33,457
Accidental	2	0.7	\$18,137
Self-Inflicted/Assault/Undetermined	1	0.4	\$15,320
Firearms	11	4.0	\$1,778,348
Accidental	5	1.8	\$135,912
Self-Inflicted	2	0.7	\$50,535
Assault	3	1.1	\$1,498,416
Undetermined	1	0.4	\$93,484
Hot Objects/Scalds	22	8.0	\$616,460
Accidental	5	1.8	\$89,145
Self-Inflicted/Assault/Undetermined	17	6.2	\$527,315
Machinery	58	21.2	\$1,568,114
Motor Veh Traffic	171	62.4	\$8,862,060
Accidental	168	61.3	\$8,805,087
Self-Inflicted/Assault/Undetermined	3	1.1	\$56,973
Oth Pedal Cycle	54	19.7	\$1,554,914
Oth Mot Veh Nontraffic	113	41.2	\$4,602,092
Oth Transport	28	10.2	\$1,181,016
Natural/Environmental	894	326.2	\$15,948,970
Overexertion	224	81.7	\$5,033,664
Poisoning	1,719	627.3	\$58,783,032
Accidental	77	28.1	\$1,905,151
Self-Inflicted	167	60.9	\$3,309,570
Assault	1	0.4	\$556
Undetermined	1,474	537.9	\$53,567,756
Striking/Struck By	177	64.6	\$4,410,566
Accidental	151	55.1	\$3,717,013
Assault	26	9.5	\$693,554
Other Injury	29	10.6	\$632,104
Accidental	28	10.2	\$600,019
Self-Inflicted	0	N/A	N/A
Assault	1	0.4	\$32,085
Undetermined	0	N/A	N/A
Others	0	N/A	N/A
	Total Injuries	5,187	\$149,227,006
	Total Self-Inflicted	217	\$4,974,925
	Total Assaults	35	\$2,347,079

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, 2017

Injury Category	Number of Cases	Rate per 100,000 population	Total Charges
Cut/Pierce	169	36.5	\$2,438,998
Accidental	132	28.5	\$1,829,217
Self-Inflicted	32	6.9	\$486,990
Assault	3	0.6	\$101,250
Undetermined	2	0.4	\$21,542
Drown/Submersion	4	0.9	\$92,839
Accidental	4	0.9	\$92,839
Self-Inflicted/Assault/Undetermined	0	N/A	N/A
Falls	2,986	644.3	\$84,384,074
Accidental	2,981	643.2	\$84,270,408
Self-Inflicted/Assault/Undetermined	5	1.1	\$113,667
Fire/Flames	7	1.5	\$146,779
Accidental	6	1.3	\$117,045
Self-Inflicted/Assault/Undetermined	1	0.2	\$29,734
Firearms	16	3.5	\$504,234
Accidental	12	2.6	\$401,070
Self-Inflicted	3	0.6	\$58,518
Assault	1	0.2	\$44,645
Undetermined	0	N/A	N/A
Hot Objects/Scalds	42	9.1	\$692,236
Accidental	16	3.5	\$330,150
Self-Inflicted/Assault/Undetermined	26	5.6	\$362,086
Machinery	78	16.8	\$2,229,949
Motor Veh Traffic	365	78.8	\$19,443,067
Accidental	364	78.5	\$19,427,262
Self-Inflicted/Assault/Undetermined	1	0.2	\$15,805
Oth Pedal Cycle	57	12.3	\$1,362,139
Oth Mot Veh Nontraffic	182	39.3	\$8,552,026
Oth Transport	39	8.4	\$1,168,003
Natural/Environmental	1,755	378.7	\$38,478,698
Overexertion	460	99.2	\$5,940,499
Poisoning	3,611	779.1	\$115,471,495
Accidental	132	28.5	\$2,947,103
Self-Inflicted	145	31.3	\$2,335,175
Assault	0	N/A	N/A
Undetermined	3,334	719.3	\$110,189,217
Striking/Struck By	244	52.6	\$5,337,147
Accidental	205	44.2	\$4,445,503
Assault	39	8.4	\$891,644
Other Injury	68	14.7	\$1,066,120
Accidental	60	12.9	\$917,689
Self-Inflicted	1	0.2	\$11,722
Assault	6	1.3	\$102,333
Undetermined	1	0.2	\$34,376
Others	0	N/A	N/A
	Total Injuries	10,083	2,175.5
	Total Self-Inflicted	208	44.9
	Total Assaults	49	10.6

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, 2017

Injury Category	Number of Cases	Rate per 100,000 population	Total Charges
Cut/Pierce	22	15.7	\$229,395
Accidental	11	7.8	\$103,779
Self-Inflicted	10	7.1	\$112,917
Assault	1	0.7	\$12,699
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	179	127.5	\$2,251,311
Accidental	179	127.5	\$2,251,311
Self-Inflicted/Assault/Undetermined	0	N/A	N/A
Fire/Flames	3	2.1	\$104,166
Accidental	1	0.7	\$31,328
Self-Inflicted/Assault/Undetermined	2	1.4	\$72,838
Firearms	0	N/A	N/A
Accidental	0	N/A	N/A
Self-Inflicted	0	N/A	N/A
Assault	0	N/A	N/A
Undetermined	0	N/A	N/A
Hot Objects/Scalds	7	5.0	\$72,063
Accidental	0	N/A	N/A
Self-Inflicted/Assault/Undetermined	7	5.0	\$72,063
Machinery	3	2.1	\$31,017
Motor Veh Traffic	7	5.0	\$104,448
Accidental	7	5.0	\$104,448
Self-Inflicted/Assault/Undetermined	0	N/A	N/A
Oth Pedal Cycle	2	1.4	\$22,577
Oth Mot Veh Nontraffic	9	6.4	\$104,720
Oth Transport	2	1.4	\$20,908
Natural/Environmental	117	83.3	\$1,269,717
Overexertion	11	7.8	\$101,349
Poisoning	291	207.2	\$4,044,365
Accidental	21	15.0	\$267,136
Self-Inflicted	25	17.8	\$363,784
Assault	0	N/A	N/A
Undetermined	245	174.5	\$3,413,445
Striking/Struck By	24	17.1	\$246,806
Accidental	20	14.2	\$195,990
Assault	4	2.8	\$50,817
Other Injury	5	3.6	\$45,643
Accidental	5	3.6	\$45,643
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	682	\$8,648,485
	Total Self-Inflicted	42	\$604,644
	Total Assaults	5	\$63,515

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), 2017

Injury Category	Number of Cases		Total Cases
	Male	Female	
	3	1	4
Cutting/Piercing	289	393	682
Drowning/Submersion	2	1	3
Firearms And Explosives	57	7	64
Jumping From A High Place	14	13	27
Other Self-Inflicted Injuries	195	159	354
Poisoning	721	1,368	2,089
Total Self-Inflicted Injuries	1,281	1,942	3,223

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), 2017

Injury Category	Number of Cases		Total Cases
	Male	Female	
Bite Of Human Being	15	11	26
Cutting/Piercing	124	21	145
Firearms And Explosives	178	32	210
Other Assaultive Injuries	63	25	88
Poisoning	0	3	3
Striking By Blunt Or Thrown Object	71	15	86
Unarmed Fight Or Brawl	398	156	554
Total Self-Inflicted Injuries	849	263	1,112

Source: Inpatient Data, WHA Information Center, LLC.

CHAPTER IV. OVERVIEW OF INDIVIDUAL HOSPITAL INPATIENT TABLES

Hospitals that Reported Data

X-Data were collected from 129 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, 2017, and December 31, 2017. 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 2017.

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

APR-DRG	Description
001	Liver Transplant
002	Heart and/or Lung Transplant
004	Tracheostomy with Ventilator 96+ hours with Proc or ECMO
009	Extracorporeal membrane oxygenation (ECMO)
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
198	Chest Pain with Angina Pectoris or Coronary Atherosclerosis

APR-DRG	Description
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
247	Intestinal Obstruction without Surgery
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
420	Diabetes
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

APR-DRG	Description
580	Neonate, Transferred <5 Days Old, Not Born Here
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

APR-DRG	Description
757	Organic Disturbances and Mental Retardation
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
812	Poisoning of Medicinal Agents
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

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.