H·CUP
HEALTHCARE COST AND UTILIZATION PROJECT

fact book 9

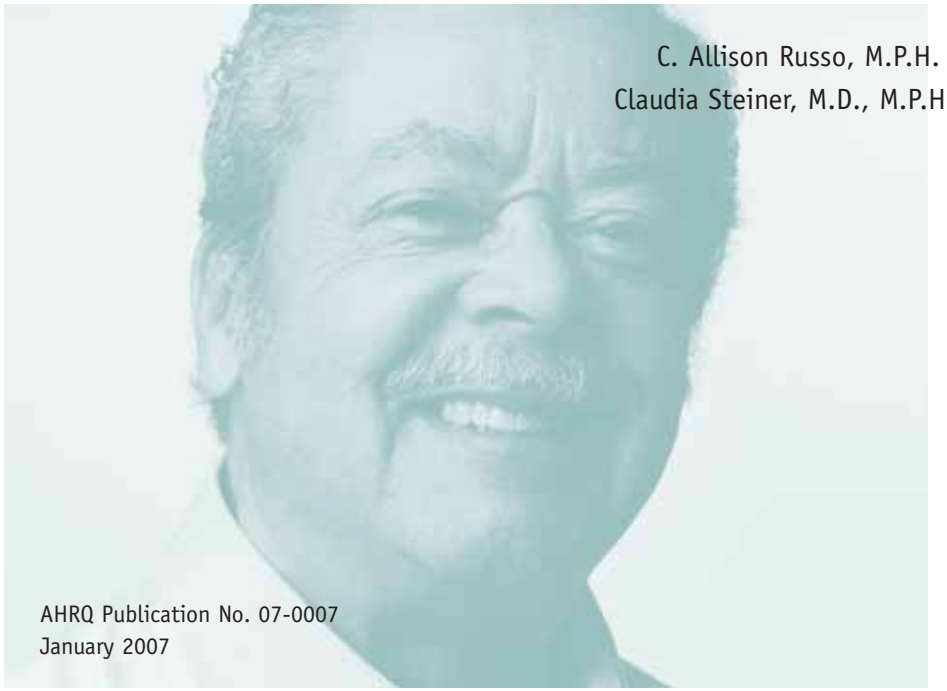
Ambulatory Surgery in U.S. Hospitals, 2003

Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

kfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfac
ookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookf
ctbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbo
kfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfac
ookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookf
ctbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbo
kfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfac
ookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookf
ctbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbo
kfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfac
ookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookf
ctbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbo
kfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfac
ookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookf
ctbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbo
kfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfac
ookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookf
ctbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbo
kfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfac
ookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookf
ctbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbo
kfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfac
ookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookf
ctbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbo
kfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfac
ookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookf
ctbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbo
kfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfac
ookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookf
ctbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbo
kfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfac
ookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookf
ctbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbo
kfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfac
ookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookf
ctbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbo
kfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfac
ookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookf
ctbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbo
kfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfac
ookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookf
ctbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbo
kfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfac
ookfactbookfactbookfactbookfactbookfactbookfactbookfactbookfactbookf

Ambulatory Surgery in U.S. Hospitals, 2003

C. Allison Russo, M.P.H. ■ Pamela Owens, Ph.D.
Claudia Steiner, M.D., M.P.H. ■ Justin Josephsen, M.A.



FACTS ON:

- **AMBULATORY AND INPATIENT SURGERIES**
- **COMMON AMBULATORY SURGERIES**
- **GENDER AND AGE CHARACTERISTICS**
- **HOSPITAL CHARGES**
- **PAYERS OF CARE**
- **SELECTED PROCEDURES AND POPULATIONS**

AHRQ Publication No. 07-0007
January 2007

Suggested Citation

Russo CA, Owens P, Steiner C, Josephsen J. *Ambulatory Surgery in U.S. Hospitals, 2003*. Agency for Healthcare Research and Quality, 2007. HCUP Fact Book No. 9. AHRQ Publication No. 07-0007. ISBN 1-58763-228-4.

Acknowledgments

The authors acknowledge the following for their contributions to this Fact Book: Devi Katikineni, Andy Mosso, and Tess Monasterio (SSS) for statistical programming; Gail Eisen and Nancy Jordan (Thomson Medstat) and DonnaRae Castillo (AHRQ) for editorial services; Katheryn Ryan (Thomson Medstat) for administrative support; and The Madison Design Group for design and layout.

HCUP Fact Book Series

1. Hospitalization in the United States, 1997 (AHRQ Pub. No. 00-0031)
2. Procedures in U.S. Hospitals, 1997 (AHRQ Pub. No. 01-0016)
3. Care of Women in U.S. Hospitals, 2000 (AHRQ Pub. No. 02-0044)
4. Care of Children and Adolescents in U.S. Hospitals (AHRQ Pub. No. 04-0004)
5. Preventable Hospitalizations: A Window into Primary and Preventive Care, 2000 (AHRQ Pub. No. 04-0056)
6. Hospitalization in the United States, 2002 (AHRQ Pub. No. 05-0056)
7. Procedures in U.S. Hospitals, 2003 (AHRQ Pub. No. 06-0039)
8. Serving the Uninsured: Safety Net Hospitals, 2003 (AHRQ Pub. No. 07-0006)

Allison Russo is from Thomson Medstat, Washington, DC; Pamela Owens, Claudia Steiner, and Justin Josephsen are from the Agency for Healthcare Research and Quality, Rockville, MD.

Previously published HCUP Fact Books are available online (**http://www.ahrq.gov/data/hcup**) and from the AHRQ Publications Clearinghouse. To order by telephone, please call (800) 358-9295 with the title and publication number; or request these materials via e-mail at **AHRQPubs@ahrq.hhs.gov**.

Executive Summary

Ambulatory surgery, or outpatient surgery, is a planned surgical episode where the patient requires less than a 24-hour hospital stay. The use of ambulatory surgery as an alternative to inpatient surgery has become more common, and outpatient surgeries account for a growing proportion of surgeries performed in hospitals. In 2002, outpatient surgeries accounted for 63 percent of all surgeries performed in community hospitals nationally, compared with only 16 percent in 1980.[1] The overall increase in ambulatory surgeries can be explained primarily by two major factors. First, advances in surgical technology and anesthesia have made surgery easier on patients and increased the demand for outpatient care. Second, health care policies have created economic incentives that encourage ambulatory surgery.[2]

Ambulatory Surgery in U.S. Hospitals, 2003 summarizes information about hospital-based ambulatory surgeries for 17 States based on data from two databases maintained by the Agency for Healthcare Research and Quality (AHRQ): the State Ambulatory Surgery Databases (SASD) and the State Inpatient Databases (SID). These data sources are used to examine a cross section of surgeries performed in inpatient and outpatient settings in order to assess differences in the utilization and cost of various surgical procedures across these settings. This report provides insight for individuals interested in gaining a better understanding of characteristics of ambulatory surgeries. Additionally, comparisons between surgeries performed in the outpatient and inpatient settings are noted.

In the 17 States covered in this report, nearly 52 percent of surgical encounters occurred in the outpatient hospital setting, ranging from 42 percent to 66 percent.

■ ■ ■

Almost 4,100 ambulatory surgical visits per 100,000 individuals took place in acute care hospitals compared with 3,800 inpatient surgical visits per 100,000 individuals.

This Fact Book addresses the following:

- How did ambulatory and inpatient surgeries compare?
- Who obtained ambulatory surgeries?
- What were the most common ambulatory surgeries?
- How did ambulatory surgeries vary by gender and age?
- Which ambulatory surgeries were associated with the highest charges?
- Who was billed for ambulatory surgical visits?

In addition, this Fact Book provides detailed statistics on:

- Four surgical procedures that are influenced by technological advances.
- Four surgical procedures specific to certain populations (i.e., children, women, or men).

HOW DID AMBULATORY AND INPATIENT SURGERIES COMPARE?

Based on data from the 17 States examined for this report, more than 3.9 million ambulatory surgical visits took place in 2003, totaling $18.3 billion in aggregate charges. These visits resulted in over 4.9 million surgeries. Overall, 52 percent of surgical visits and stays were ambulatory in nature, but this percentage varied by State—from 42 percent to 66 percent in the 17 States covered in this report. In 2003, this translated to approximately 4,100 ambulatory surgical visits per 100,000 individuals, compared with 3,800 inpatient surgical stays per 100,000 individuals.[3] The majority of ambulatory surgical visits occurred in large, metropolitan, private not-for-profit, non-teaching hospitals. Almost 13 percent took place in non-Federal government hospitals and 9 percent in for-profit hospitals.

WHO OBTAINED AMBULATORY SURGERIES?

Females had more ambulatory surgeries than males in 2003. Of the 3.9 million ambulatory surgical visits studied in this report, 59 percent were performed on females. The gender distribution of ambulatory and inpatient surgical encounters was very similar, with more females than males obtaining surgeries in both settings.

The distribution of ambulatory surgical visits varied by age group. Patients ages 18 to 44 accounted for nearly 33 percent of these visits—more than any other age group. Most inpatient surgical stays occurred among patients 65 and older.

Lens and cataract surgery was the most commonly performed ambulatory surgery in 2003.

■ ■ ■

About 9 in 10 ambulatory surgeries were performed for therapeutic purposes while only 1 in 10 was used to diagnose disorders.

WHAT WERE THE MOST COMMON AMBULATORY SURGERIES?

In 2003, about 90 percent of ambulatory surgeries were for therapeutic reasons, while the remaining surgeries were for diagnostic reasons. Lens and cataract surgery was the most common ambulatory surgery and resulted in nearly 9 percent of all outpatient surgeries. Removal of the tonsils and/or adenoids and myringotomy (ear tube surgery), procedures generally performed on children and adolescents, accounted for 4 and 3 percent, respectively, of all ambulatory surgeries. Lumpectomy and diagnostic dilatation and curettage (D&C)—two surgeries primarily or exclusively performed on women—each resulted in approximately 3 percent of all ambulatory surgeries.

Three of the 10 most common ambulatory surgery procedures were related to treating or diagnosing musculoskeletal system disorders: other therapeutic procedures on the muscles and tendons, other operating room (O.R.) therapeutic procedures on the joints, and excision of the semilunar cartilage of the knee. Other common ambulatory surgeries included hernia repair and cholecystectomy (surgical removal of the gallbladder).

Body System

In 2003, procedures related to the musculoskeletal system were performed in nearly 26 percent of all ambulatory surgeries. Ambulatory surgeries accounted for the majority of surgeries performed on the musculoskeletal system, eye, integumentary system, ear, and nose, mouth, and pharynx. In fact, surgeries related to the eye, ear, and nose, mouth, and pharynx were 90 to 98 percent outpatient. Conversely, surgeries performed to treat and/or diagnose disorders of the digestive, nervous, cardiovascular, male genital, heme and lymphatic, respiratory, and endocrine systems, as well as obstetrical surgeries, were primarily inpatient.

HOW DID AMBULATORY SURGERIES VARY BY GENDER AND AGE?

Gender

In 2003, lens and cataract surgery was the most common ambulatory surgery performed for males and females. In total, 4 of the 10 most common ambulatory surgeries were performed on both males and females, with lens and cataract surgery being the most common. The next three included other therapeutic procedures on muscles tendons, other O.R. procedures on the joints, and tonsillectomy and/or adenoidectomy. However, there was some variation in which outpatient surgical procedures were utilized most frequently by gender. For example, hernia repair, excision of the semilunar cartilage of the knee, myringotomy, other O.R. therapeutic procedures on the nose, mouth, and pharynx, and arthroscopy were among the top 10 procedures for males but not for females. Cholecystectomy, decompression of the peripheral nerve, and other O.R. therapeutic procedures on the skin and breast were top 10 surgeries performed on females but not performed as often on males. Three of the top 10 surgeries for females related to female-specific procedures—lumpectomy, diagnostic D&C, and other excision of the cervix and uterus. Transurethral excision, drainage, or removal of a

urinary obstruction—a male-specific procedure—was among the top 10 ambulatory surgeries performed on males.

Age

The most common surgeries performed in ambulatory settings varied considerably by age. Only 3 ambulatory surgeries were commonly performed across each age group: hernia repair, other therapeutic procedures on muscles and tendons, and other O.R. therapeutic procedures on joints. Other excision of the cervix and uterus, diagnostic D&C, and lumpectomy accounted for 3 of the most common ambulatory surgeries performed on patients ages 18 to 44. Approximately 1 in 5 surgeries performed on patients ages 45 to 64 were used to treat or diagnose musculoskeletal system disorders. Nearly 32 percent of ambulatory surgeries for patients ages 65 and older involved cataract and lens procedures—the most common surgery performed in an outpatient setting for this age group.

WHICH AMBULATORY SURGERIES WERE ASSOCIATED WITH THE HIGHEST CHARGES?

In 2003, the average charge for an ambulatory surgical visit was $5,600, compared with $28,300 for an inpatient surgical stay. Five of the 10 surgeries associated with the most expensive ambulatory surgical visits involved the treatment and diagnosis of cardiovascular disorders: percutaneous coronary angioplasty (PTCA), insertion of a cardiac pacemaker or defibrillator, other O.R. heart procedures, endovascular repair of an aneurysm, and other O.R. procedures on vessels other than the head and neck. Two of the 10 most expensive ambulatory surgeries were related to musculoskeletal system disorders: spinal fusion and laminectomy. Open prostatectomy—a procedure performed only on men—was the fifth most expensive ambulatory surgery. Collectively, the most expensive ambulatory surgeries were not very common, and represented less than 4 percent of all outpatient surgical visits.

The most common ambulatory surgery performed for both genders was lens and cataract surgery. This procedure was also common among patients 65 and older, accounting for nearly 32 percent of all ambulatory surgery procedures in this population.

■ ■ ■

The average charge for an ambulatory surgical visit was $5,600, compared with $28,300 for an inpatient surgical stay.

■ ■ ■

Collectively, the 10 costliest ambulatory surgeries were performed in less than 4 percent of all ambulatory surgical visits.

WHO WAS BILLED FOR AMBULATORY SURGICAL VISITS?

In 2003, private insurance was billed for approximately 55 percent of ambulatory surgical visits compared with 46 percent of inpatient surgical stays. Government insurance programs (Medicare and Medicaid) were billed for about one-third of ambulatory surgical visits. In contrast, nearly half of all inpatient surgical stays were billed to the government. Less than 4 percent of ambulatory surgical visits were uninsured.

Medicare

In 2003, Medicare, the federally sponsored health care program for the elderly and disabled, served approximately 14.6 million individuals in the 17 States examined, most of whom were 65 years and older.[4] Medicare was billed for approximately 24 percent of ambulatory surgeries, while only 13 percent of the population in these states was covered by Medicare. The most common ambulatory surgery billed to Medicare was lens and cataract surgery. Approximately 75 percent of outpatient surgeries related to lens and cataract procedures were billed to Medicare. Transurethral excision, drainage, or removal of a urinary obstruction, and decompression of the peripheral nerve were among the top 10 ambulatory surgeries billed to Medicare, but were not top 10 outpatient surgeries billed to other payer groups. Medicare was billed for 40 percent and 24 percent, respectively, of all ambulatory surgeries related to these procedures.

Medicaid

Medicaid, the federally and State-sponsored health care program for low-income people, served about 12.7 million individuals in the 17 States examined.[4] In 2003, approximately 12 percent of the population in these states was covered by Medicaid, and this program was billed for 12 percent of all ambulatory surgical visits. Women and children continue to comprise a large portion of Medicaid's enrollment, which resulted in Medicaid being billed for a large share of certain surgeries.

Two of the top 10 ambulatory surgeries billed to Medicaid are primarily performed in children: myringotomy (ear tube surgery) and removal of the tonsils and adenoids. Medicaid was billed for 27 percent of outpatient myringotomies and for 23 percent of outpatient surgeries involving the removal of the tonsils and adenoids. Other excision of the cervix and uterus, diagnostic D&C, and lumpectomy were 3 of the most common ambulatory surgeries billed to Medicaid in 2003.

Lens and cataract surgery was the most common ambulatory surgery billed to Medicare.

■ ■ ■

Private insurers were billed for approximately 3 out of 4 ambulatory surgeries involving dilation and curettage (D&C) and other excision of the cervix and uterus.

Private Insurance

In 2003, more than 78.3 million individuals in the 17 States examined had private health insurance through commercial insurance plans.[4] These plans included employer-sponsored health plans and self-purchased plans. Commercial health plans were billed for approximately 55 percent of all ambulatory surgical visits. Almost 13 percent of all ambulatory surgeries billed to private insurers were for the treatment and diagnosis of musculoskeletal system disorders. An even larger proportion of charges associated with these surgeries, more than 50 percent, were billed to private insurers. Approximately 3 out of 4 ambulatory surgeries involving diagnostic D&C and other excision of the cervix and uterus were billed to private insurers. Private insurers were billed for 71 percent of ambulatory surgeries involving the removal of the tonsils and adenoids.

Uninsured

In 2003, about 14.9 million individuals, about 14 percent of the population in the 17 states evaluated, had no health insurance.[4] However, only 3 percent of ambulatory surgical visits were performed on uninsured patients. Approximately 1 in 6 ambulatory surgeries performed on uninsured people were related to other O.R. therapeutic procedures on the skin and breast. Nine of the 10 most common ambulatory surgeries performed on the uninsured were the same surgical procedures commonly performed on patients ages 18 to 44.

PROCEDURES INFLUENCED BY TECHNOLOGICAL ADVANCES

Improvements in technologies have influenced a transition from inpatient to outpatient surgical settings. Examples of surgical procedures that reflect evolving patterns of care because of advances in technology include:

- Appendectomy—surgical removal of the appendix
- Cholecystectomy—surgical removal of the gallbladder
- Hernia repair—surgical repair of the abdominal wall
- Bariatric surgery—surgical reduction of the stomach

Appendectomy

Approximately 16 percent of appendectomies were performed in an ambulatory setting. Over 98 percent of all appendectomies were performed on patients younger than 65, with more than 6 in 10 outpatient appendectomies performed on patients ages 18 to 44. Unlike in younger age groups, the proportion of inpatient appendectomies was significantly higher than the proportion of outpatient appendectomies performed on patients 65 and older. There were also gender differences in the use of inpatient or ambulatory settings for appendectomies. Although the number of inpatient appendectomies performed on males

and females was virtually equal, the proportion of females receiving these procedures in an outpatient setting was somewhat higher than in the inpatient setting—53 percent versus 47 percent.

Approximately two-thirds of all appendectomies were billed to private insurers. However, this rate also varied by setting, with a greater proportion of outpatient appendectomies billed to private insurers, as compared with inpatient appendectomies.

Cholecystectomy

Half of all surgeries involving a cholecystectomy were performed on an outpatient basis. On average, patients receiving a cholecystectomy in an ambulatory setting were about 8 years younger than those receiving an inpatient cholecystectomy. Outpatient cholecystectomies were most often performed on patients ages 18 to 44, followed closely by patients ages 45 to 64. Although the percentage of outpatient cholecystecomies was higher or equal to the percentage of inpatient cholecystecomies performed on patients younger than 65, this was not the case for the elderly. The proportion of inpatient cholecystectomies performed on patients 65 and older (34 percent) was over twice that of outpatient cholecystectomies (14 percent).

Females accounted for about 1 in 10 outpatient hernia repairs; but in the inpatient setting, nearly 1 in 4 of these surgeries was performed on females.

■ ■ ■

Uninsured patients represented almost 12 percent of outpatient bariatric surgeries, while only 2 percent of inpatient bariatric surgeries were uninsured.

More than 3 out of 4 outpatient cholecystectomies were performed on females, while this group accounted for 2 out of 3 cholecystectomies performed on an inpatient basis. Compared with inpatient cholecystectomy procedures, the proportion of outpatient cholecystectomies billed to private insurers was considerably higher—66 percent versus 43 percent. Consequently, the proportion of outpatient procedures billed to Medicare was lower than the proportion of inpatient procedures billed to Medicare—15 percent versus 34 percent, respectively.

Hernia Repair

Nearly 89 percent of hernia repairs were performed on an outpatient basis. On average, patients who received a hernia repair in an ambulatory setting were 12 years younger than those patients receiving an inpatient hernia repair. In fact, more than 3 out of 4 outpatient hernia repairs were performed on patients younger than 65, while over half of all inpatient hernia repairs were performed on patients 65 and older. Consequently, the proportion of inpatient hernia repairs performed on patients 65 and older (54 percent) was more than twice the proportion performed in the outpatient setting for this age group (25 percent). Similarly, the occurrence of these surgeries among females was more than twice as high in the inpatient setting compared with the outpatient setting—24 percent versus 11 percent. Private insurers were billed for the highest proportion of outpatient hernia repairs (58 percent), which likely reflects the age differences among outpatient and inpatient hernia repairs. Medicare was billed for the highest proportion of inpatient hernia repairs (51 percent).

Bariatric Surgery

Only 3 percent of bariatric surgeries were performed on an outpatient basis. The mean age for bariatric surgery was approximately 42 years, regardless of inpatient or outpatient status, and almost all bariatric surgeries performed in an ambulatory setting occurred in patients ages 18 to 64. Moreover, nearly 83 percent of outpatient bariatric surgeries were performed on females, which is similar to the proportion of inpatient bariatric surgeries performed on females. Not surprisingly, private insurers were billed for 8 out of 10 outpatient bariatric surgeries, while only 5 percent of these surgeries were billed to government payers (Medicare and Medicaid). The rate of outpatient bariatric surgeries billed to uninsured patients was almost 5 times the rate of inpatient bariatric surgeries billed to this group.

AMBULATORY SURGERIES SPECIFIC TO CERTAIN POPULATIONS

Certain surgical procedures are performed primarily or exclusively in children, women, or men. These include:

- Tonsillectomy and/or adenoidectomy—surgical removal of the tonsils and/or adenoids
- Mastectomy—surgical removal of the breast
- Hysterectomy—surgical removal of the uterus
- Transurethral prostatectomy (TURP)—surgical treatment of an enlarged prostate

Tonsillectomy and/or Adenoidectomy in Children

Nearly all (96 percent) of tonsillectomy and/or adenoidectomy procedures performed in children occurred in an ambulatory setting. The mean age for a tonsillectomy and/or adenoidectomy was approximately 7 years, regardless of whether the procedure took place in an inpatient or outpatient setting. Although the percentage of outpatient tonsillectomies and/or adenoidectomies performed in boys and girls was virtually equal, these procedures were performed more often as inpatient surgeries in boys (57 percent versus 43 percent). Outpatient tonsillectomies and/or adenoidectomies were most often billed to private insurance, but the proportion of outpatient surgeries billed to private insurers was considerably higher compared with the proportion of inpatient surgeries billed to this payer—67 percent versus 54 percent. Consequently, the proportion of outpatient procedures billed to Medicaid was lower than the proportion of inpatient procedures billed to Medicaid—28 percent versus 41 percent, respectively.

About 22 percent of mastectomies were performed in an ambulatory setting.

Mastectomy in Women

Nearly 22 percent of mastectomies in women were performed in an ambulatory setting. Over half of all outpatient mastectomies occurred in women ages 45 to 64, but the percentage of mastectomies performed in an ambulatory setting decreased significantly as women aged. The percentage of inpatient mastectomies performed on women ages 45 to 64 and women 65 and older was nearly equal. More than half of outpatient mastectomies were billed to private insurers, and Medicare was billed for almost one-third of these surgeries.

Hysterectomy in Women

Less than 9 percent of hysterectomies were performed in an ambulatory setting. Over half of all hysterectomies were performed on women ages 18 to 44, followed by nearly 40 percent for women ages 45 to 64. However, this distribution differed significantly for women receiving this surgery in an outpatient venue. In fact, women ages 18 to 44 accounted for 67 percent of outpatient hysterectomies, while less than one-third of these outpatient surgeries were performed on women ages 45 to 64. Private insurers were billed for approximately 81 percent of outpatient hysterectomies. While 11 percent of outpatient hysterectomies were billed to government insurance programs (i.e., Medicare and Medicaid), nearly 22 percent of inpatient hysterectomies were billed to government payers.

Transurethral Prostatectomy in Men

About 20 percent of transurethral prostatectomies were performed in an ambulatory setting. Men receiving TURPs on an outpatient basis were slightly younger than men receiving inpatient TURPs (69 years versus 73 years, respectively). The percentage of outpatient TURPs performed on men ages 45 to 64 (31 percent) was considerably higher than the percentage of inpatient TURPs performed on this age group (19 percent). In contrast, the reverse was true for patients 65 and older, where the percentage of inpatient TURPs performed in this age group was 81 percent compared with 68 percent for outpatient TURPs. Because this procedure was performed most often on men 65 and older, Medicare was billed for the majority of both outpatient and inpatient TURP procedures. However, private insurers were billed for about 32 percent of hospital charges when this procedure was performed on an outpatient basis compared with only 18 percent of charges when performed in an inpatient setting.

Table of Contents

Foreword

The mission of the Agency for Healthcare Research and Quality (AHRQ) is to improve the quality, safety, efficiency, and effectiveness of health care for all Americans. To help fulfill this mission, AHRQ develops a number of powerful databases, including those created by the Healthcare Cost and Utilization Project (HCUP). HCUP is a Federal-State-Industry partnership designed to build a standardized, multi-State health data system. HCUP features databases, software tools, and statistical reports to inform policymakers, health system leaders, and researchers.

For data to be useful, they must be disseminated in a timely, accessible way. To meet this objective, AHRQ launched HCUPnet, an interactive, Internet-based tool for identifying, tracking, analyzing, and comparing statistics on hospital utilization, outcomes, and charges (**http://hcupnet.ahrq.gov/**). The online, menu-driven HCUPnet guides users in tailoring specific queries about hospital care online; with a click of a button, users receive answers within seconds.

To make HCUP data even more accessible, AHRQ disseminates HCUP Statistical Briefs, an online publication series that presents simple, descriptive statistics on a variety of specific, focused topics (**http://www.hcup-us.ahrq.gov/reports/statbriefs.jsp**). Statistical Briefs are made available regularly throughout the year and have covered topics such as hospitalizations among the uninsured, the national bill for hospital care by payer, and hospitalizations related to childbirth.

In addition, AHRQ produces the HCUP Fact Books to highlight statistics about hospital care in an easy-to-use, readily accessible format. Each Fact Book provides information about specific aspects of hospital care—the single largest component of the U.S. health care dollar. These national estimates are benchmarks against which States and others can compare their own data.

This Fact Book presents characteristics of hospital-based ambulatory surgeries in 2003. The State Ambulatory Surgery Databases (SASD) and the State Inpatient Databases (SID) are used to evaluate a cross-section of surgeries performed in inpatient and outpatient settings in order to

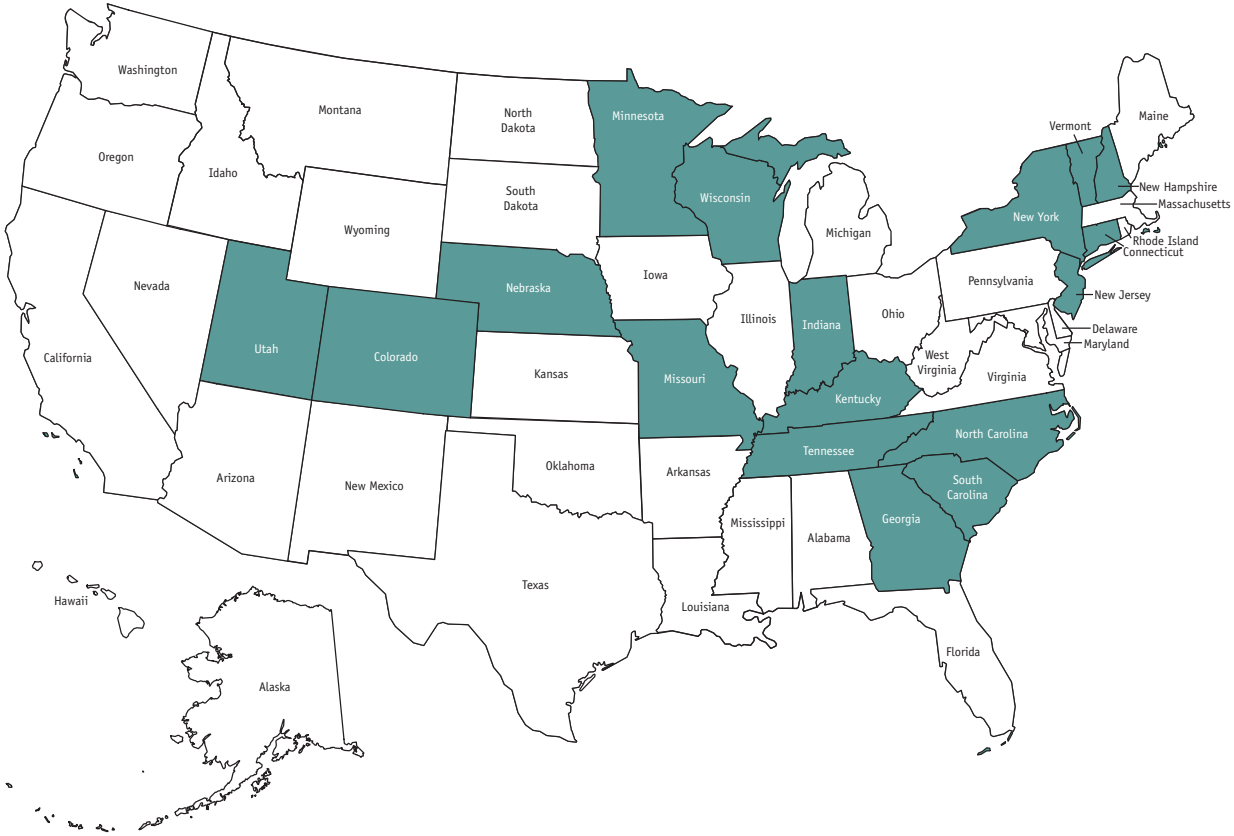
examine differences in the utilization and cost of various surgical procedures in these settings. This report provides insight for individuals interested in gaining a better understanding of ambulatory surgery data and how these data compare with inpatient surgery data.

AHRQ welcomes questions and comments from readers of this report who are interested in obtaining more information about ambulatory surgeries in the United States. We also invite you to tell us how you are using this Fact Book and other HCUP data and tools and to share suggestions on how HCUP products might be enhanced to further meet your needs. Please e-mail us at **hcup@ahrq.gov** or send a letter to the address below.

Irene Fraser, Ph.D.
Director
Center for Delivery, Organization, and Markets
Agency for Healthcare Research and Quality
540 Gaither Road
Rockville, MD 20850

Contributors

The State Ambulatory Surgery Databases (SASD) and the State Inpatient Databases (SID) are two in a family of databases and software tools developed as part of the Healthcare Cost and Utilization Project (HCUP). The SASD capture surgeries performed on the same day in which patients are admitted and released and contain clinical and resource use information included in a typical discharge abstract from hospital-based ambulatory surgery sites.[i] The SID contain clinical and resource use information from the universe of the inpatient discharge abstracts in participating States. This report includes data from 17 selected States who contributed to both the SASD and SID in 2003:



Colorado Health & Hospital Association

Connecticut Chime, Inc.

Georgia GHA: An Association of Hospitals & Health Systems

Indiana Hospital&Health Association

Kentucky Cabinet for Health and Family Services

Minnesota Hospital Association

Missouri Hospital Industry Data Institute

Nebraska Hospital Association

New Hampshire Department of Health & Human Services

New Jersey Department of Health & Senior Services

New York State Department of Health

North Carolina Department of Health and Human Services

South Carolina State Budget and Control Board

Tennessee Hospital Association

Utah Department of Health

Vermont Association of Hospitals and Health Systems

Wisconsin Department of Health and Family Services

[i]Data from freestanding ambulatory surgery sites have been excluded from this report.

Introduction

Ambulatory surgery, or outpatient surgery, is a planned surgical episode where the patient requires less than a 24-hour stay. Outpatient procedures account for a growing proportion of surgeries performed in hospitals as the use of ambulatory surgeries as an alternative to inpatient surgery has become more common. Nationally, ambulatory surgeries accounted for 63 percent of all surgeries performed in community hospitals in 2002, compared with only 16 percent in 1980.[1]

Two major factors explain this overall growth in ambulatory surgeries (1) advances in surgical technology and anesthesia have made surgery easier on patients and increased the demand for outpatient care, and (2) health care policies have created economic incentives that encourage ambulatory surgery.[2] For example, the Medicare program expanded coverage to ambulatory surgery centers and adopted a prospective payment system that created financial incentives for hospitals to shift patients to outpatient facilities.

As the number and type of surgeries performed in the outpatient setting have increased, so have concerns about cost, safety, and efficacy. There is particular concern about the safety of outpatient procedures for specific subgroups of patients, such as the elderly and children. A comparison of ambulatory surgery data to inpatient surgery data is essential for understanding the differences in utilization and costs for specific subpopulations and procedures.

This Fact Book summarizes hospital-based inpatient and outpatient surgery information from the State Inpatient Databases (SID) and the State Ambulatory Surgery Databases (SASD) maintained by the Agency for Healthcare Research and Quality (AHRQ). The SID contain the universe of the inpatient discharge abstracts in 38 Partner States. The SASD include surgeries performed on the same day in which patients are admitted and released and capture the vast majority of hospital-based ambulatory surgeries in 20 Partner States. This report examines 2003 inpatient and ambulatory surgery data from 17 selected States. Because of their large size—13 million records in the 17 selected SID and 11 million records in the 17 selected SASD—these databases can provide information on relatively uncommon surgical procedures, as well as on subpopulations, such as specific or smaller age groups. The SID and SASD capture all types of patients discharged from hospitals, including the uninsured, those covered by public payers (Medicare and Medicaid), and those with private insurance. They also provide information on total hospital charges for all patients, unlike any other data source in the United States.

This Fact Book addresses these central questions:

- How did ambulatory and inpatient surgeries compare?
- Who obtained ambulatory surgeries?
- What were the most common ambulatory surgery procedures?
- How did ambulatory surgeries vary by gender and age?
- Which ambulatory surgeries were associated with the highest charges?
- Who was billed for ambulatory surgical visits?

In addition, this Fact Book provides detailed statistics on:

- Four surgical procedures that are influenced by technological advances.
- Four surgical procedures specific to certain populations (i.e., children, women, or men).

A complete medical dictionary containing terms used in this Fact Book is available at **http://www.nlm.nih.gov/medlineplus/mplusdictionary.html.**

PART I:
Overview

How did ambulatory and inpatient surgeries compare?

The American Hospital Association (AHA) defines "community hospitals" as non-Federal, short-term (or acute care) general and specialty hospitals whose facilities and services are available to the public, including children's, orthopedic, and rehabilitation hospitals, as well as non-Federal academic medical centers. Approximately 85 percent of all hospitals registered in the United States are community hospitals.[5]

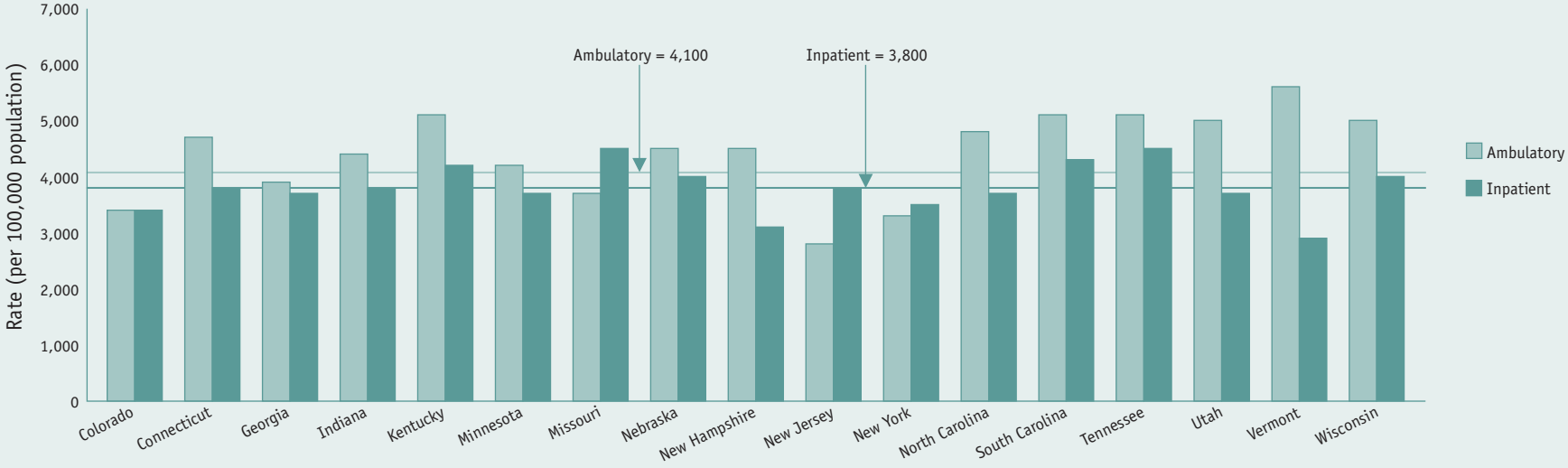
The following table compares the characteristics of community hospitals in which both ambulatory and inpatient surgeries were performed.

CHARACTERISTICS OF COMMUNITY HOSPITALS	AMBULATORY SURGERIES (SASD)	INPATIENT SURGERIES (SID)
Total visits/stays for surgeries	3,919,100	3,655,000
Visits/stays per 100,000 population[3]	4,100	3,800
Total number of surgeries	4,932,700	5,095,100
Average number of surgeries per visit/stay	1.5	1.5
Total (aggregate) charge	$18.3 billion	$103.4 billion
Mean charge per visit/stay[a]	$5,600	$28,300
Percentage of visits/stays by type of hospital:[b]		
Large hospitals	59.8	67.1
Metropolitan hospitals	81.4	86.6
Teaching hospitals	42.3	53.7
Non-Federal government hospitals	12.6	11.9
Private not-for-profit hospitals	78.5	80.6
Private for-profit hospitals	8.9	7.5

[a]Mean charges are for hospital-based ambulatory and inpatient surgical visits and stays. Inpatient surgical stays are typically more expensive because of longer lengths of stay and the use of multiple procedures.
[b]Hospital characteristics related to bed size, location, and teaching status are not mutually exclusive.

- In 2003, nearly 52 percent of all surgical visits and stays occurred in outpatient settings; figures ranged from 42 to 66 percent in the 17 selected States.
- Adjusted for State population levels,[3] approximately 4,100 ambulatory surgical visits per 100,000 individuals occurred. This rate ranged from 2,800 per 100,000 individuals in New Jersey to 5,600 per 100,000 individuals in Vermont.
- For all States in 2003, the mean number of inpatient surgical stays per 100,000 individuals was nearly 3,800, ranging from 2,900 in Vermont to 4,500 in Missouri and Tennessee.

Distribution of Surgical Visits and Stays by State

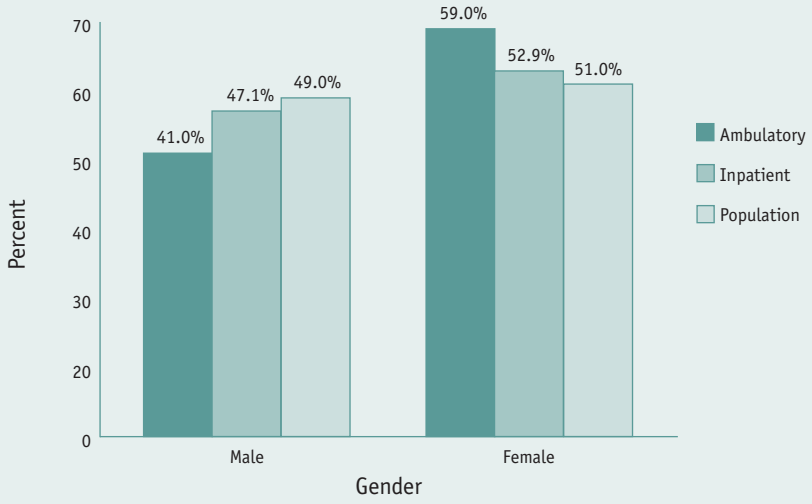


Note: Rates have been adjusted for State population levels.

Who obtained ambulatory surgeries?

- Although the population of males and females was nearly equal in the 17 selected States,[6] approximately 59 percent of ambulatory surgical visits occurred among females.
- While more females than males obtained surgeries in both settings, females were disproportionally more likely to have an ambulatory surgical visit than males.

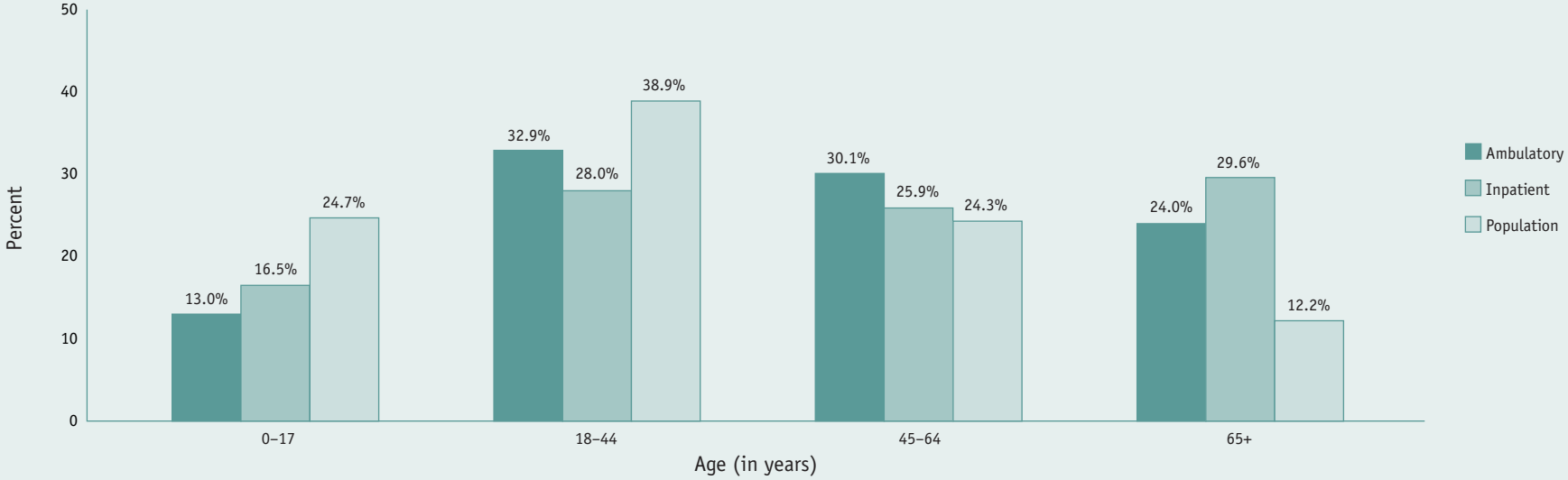
Percent of Surgical Visits and Stays by Gender



Note: Population figures represent the aggregate 2003 population estimates for the 17 selected States.

- The mean age for both ambulatory surgical visits and inpatient surgical stays was about 46 years (data not shown).
- Patients ages 18 to 44 comprised about 33 percent of ambulatory surgical visits—more visits than for any other age group. This group was followed closely by individuals ages 45 to 64 (30.1 percent). In comparison, inpatient surgical stays occurred most often among patients 65 and older.
- Patients ages 65 and above comprised about 12 percent of the total population of the 17 selected States,[7] but they accounted for 24 percent of all ambulatory surgical visits. Conversely, only 13 percent of ambulatory surgical visits occurred among patients ages 0 to 17, even though they constituted 25 percent of the total 17-State population.

Percentage of Surgical Visits and Stays by Age Group



Note: Population figures represent the aggregate 2003 population estimates for the 17 selected States.

What were the most common ambulatory surgeries?

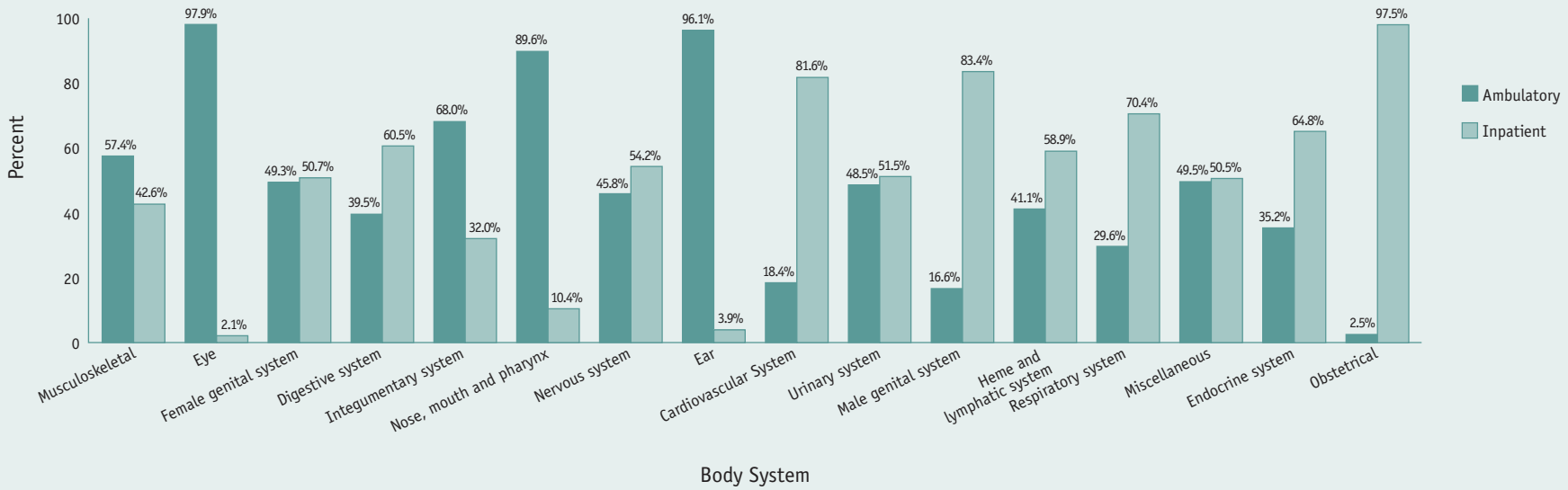
- Lens and cataract procedures accounted for nearly 9 percent of ambulatory surgeries and were performed primarily on patients 65 and older.
- Three of the 10 most common ambulatory surgeries were related to the musculoskeletal system: other therapeutic procedures on the muscles and tendons (5.0 percent), other operating room (O.R.) therapeutic procedures on the joints (3.4 percent), and excision of the semilunar cartilage of the knee (3.2 percent).
- Two of the 10 most common ambulatory surgeries were primarily performed on children: tonsillectomy and/or adenoidectomy (3.8 percent) and myringotomy, or ear tube surgery (3.0 percent).
- Hernia repair and cholecystectomy each accounted for 3 percent of ambulatory surgeries.

TOP 10 ALL-LISTED PROCEDURES	TOTAL NUMBER OF AMBULATORY SURGERIES (in thousands)	PERCENTAGE OF AMBULATORY SURGERIES	TOTAL NUMBER OF INPATIENT SURGERIES (in thousands)	PERCENT AMBULATORY
Lens and cataract procedures	431	8.7	2	99.6
Other therapeutic procedures on muscles and tendons[a]	246	5.0	72	77.5
Tonsillectomy and/or adenoidectomy	186	3.8	10	94.9
Other O.R. therapeutic procedures on joints[a]	166	3.4	38	81.6
Excision of semilunar cartilage of knee	159	3.2	4	97.5
Inguinal and femoral hernia repair	153	3.1	19	89.1
Cholecystectomy and common duct exploration	152	3.1	143	51.5
Lumpectomy, quadrantectomy of breast	151	3.1	8	94.7
Myringotomy (ear tube surgery)	149	3.0	4	97.7
Diagnostic dilatation and curettage (D&C)	142	2.9	10	93.2

[a]See footnotes to Appendix table for definitions of other procedures.

- Lumpectomies and diagnostic D&C—two surgeries primarily or exclusively performed on women—were two of the most common surgical procedures performed in the ambulatory setting (3.1 percent and 2.9 percent, respectively).
- In 2003, about 90 percent of ambulatory surgeries were performed for therapeutic reasons; nearly 10 percent of ambulatory surgeries were performed for diagnostic reasons (data not shown).
- By body system, more ambulatory surgeries involved the treatment and/or diagnosis of disorders of the musculoskeletal system (25.5 percent) than any other system. In comparison, more inpatient surgeries were performed to treat and/or diagnose disorders of the musculoskeletal system or the digestive system (18.3 percent each) (data not shown).
- Surgeries performed on the musculoskeletal system, eye, integumentary system, ear, and nose, mouth, and pharynx were disproportionately performed in an outpatient setting; surgeries related to the eye, ear, and nose, mouth, and pharynx were 90 to 98 percent outpatient.
- Surgeries performed to treat and/or diagnose disorders of the digestive, nervous, cardiovascular, male genital, heme and lymphatic, respiratory, and endocrine systems, as well as obstetrical surgeries, were primarily inpatient.
- Surgeries involving the treatment and/or diagnosis of the female genital and urinary systems were equally performed as ambulatory and inpatient procedures.

Ambulatory vs. Inpatient Surgeries by Body System



How did ambulatory surgeries vary by gender and age?

Gender

- Lens and cataract procedures were the most common ambulatory procedure performed on both males (7.9 percent) and females (9.3 percent).
- Three of the top 10 surgeries among females related to female-specific procedures—lumpectomy (5.1 percent), diagnostic D&C (4.9 percent), and other excision of the cervix and uterus (4.4 percent).
- Transurethral excision, drainage, or removal of a urinary obstruction—a male-specific procedure—was among the top 10 ambulatory surgeries performed on males and accounted for nearly 3 percent of ambulatory surgeries performed on this population.
- Hernia repair (6.7 percent), excision of the semilunar cartilage of the knee (4.3 percent), myringotomy (4.3 percent), other O.R. therapeutic procedures on nose, mouth, and pharynx (3.3 percent), and arthroscopy (2.6 percent) were among the top 10 surgeries for males but not for females.
- Cholecystectomy (4.1 percent), decompression of the peripheral nerve (2.8 percent), and other O.R. therapeutic procedures on the skin and breast (2.5 percent) were top 10 surgeries performed on females but not for males.

TOP 10 ALL-LISTED PROCEDURES, BY GENDER	MALES	FEMALES
	NUMBER OF AMBULATORY SURGERIES, IN THOUSANDS (percentage of surgical visits with this procedure)	
Lens and cataract procedures	161 (7.9)	270 (9.3)
Inguinal and femoral hernia repair	136 (6.7)	
Other therapeutic procedures on muscles and tendons[a]	120 (5.9)	127 (4.4)
Tonsillectomy and/or adenoidectomy	90 (4.5)	96 (3.3)
Excision of semilunar cartilage of knee	87 (4.3)	
Myringotomy (ear tube surgery)	87 (4.3)	
Other O.R. therapeutic procedures on joints[a]	84 (4.2)	82 (2.8)
Other O.R. therapeutic procedures on nose, mouth, and pharynx[a]	67 (3.3)	
Arthroscopy	53 (2.6)	
Transurethral excision, drainage, or removal of a urinary obstruction	50 (2.5)	
Lumpectomy, quadrantectomy of breast		147 (5.1)
Diagnostic dilatation and curettage (D&C)		142 (4.9)
Other excision of cervix and uterus[a]		128 (4.4)
Cholecystectomy and common duct exploration		119 (4.1)
Decompression of the peripheral nerve		82 (2.8)
Other O.R. therapeutic procedures on skin and breast[a]		73 (2.5)

[a]See footnotes to Appendix table for definitions of other procedures.

Age

- Three procedures were common to all age groups: inguinal and femoral hernia repair, other therapeutic procedures on the muscles and tendons, and other operating room therapeutic procedures on joints.
- Removal of the tonsils and/or adenoids and myringotomy were the most common ambulatory surgeries performed on children ages 0 to 17. These procedures accounted for 24 percent and 23 percent, respectively, of ambulatory surgeries performed on children.
- Surgeries performed exclusively or primarily on women—other excision of cervix and uterus, diagnostic D&C, and lumpectomy—accounted for 3 of the 10 most common ambulatory surgeries performed on patients ages 18 to 44.
- Among patients 45 to 64 years of age, 4 of the 10 most commonly performed ambulatory surgeries related to the musculoskeletal system: other therapeutic procedures on the muscles and tendons (7.0 percent), excision of the semilunar cartilage of the knee (5.0 percent), other O.R. procedures on the joints (4.7 percent), and partial bone excision (2.8 percent).
- Approximately 1 out of 3 ambulatory surgeries performed on patients 65 and older involved cataract and lens procedures.

TOP 10 ALL-LISTED PROCEDURES, BY AGE GROUP	0–17 YEARS	18–44 YEARS	45–64 YEARS	65+ YEARS
	NUMBER OF AMBULATORY SURGERIES, IN THOUSANDS (percentage of surgical visits with this procedure)			
Tonsillectomy and/or adenoidectomy	150 (24.4)			
Myringotomy (ear tube surgery)	140 (22.7)			
Inguinal and femoral hernia repair	23 (3.7)	41 (2.4)	52 (3.4)	38 (3.5)
Other O.R. therapeutic procedures on nose, mouth, and pharynx[a]	20 (3.3)	55 (3.3)		
Other therapeutic procedures on muscles and tendons[a]	16 (2.6)	79 (4.7)	108 (7.0)	44 (4.0)
Other O.R. therapeutic procedures on skin and breast[a]	11 (1.8)	53 (3.1)		
Other O.R. therapeutic procedures on joints[a]	9 (1.5)	66 (3.9)	72 (4.7)	19 (1.8)
Arthroplasty knee	8 (1.4)			
Other hernia repair[a]	8 (1.3)			
Arthroscopy	6 (1.0)			
Other excision of cervix and uterus[a]		85 (5.0)		
Cholecystectomy and common duct exploration		72 (4.3)	56 (3.6)	21 (2.0)
Diagnostic dilatation and curettage (D&C)		70 (4.2)	58 (3.8)	
Excision of semilunar cartilage of knee		53 (3.1)	78 (5.0)	23 (2.1)
Lumpectomy, quadrantectomy of breast		47 (2.8)	68 (4.4)	33 (3.1)
Lens and cataract procedures			80 (5.2)	342 (31.5)
Decompression of the peripheral nerve			59 (3.8)	27 (2.5)
Partial excision of the bone			43 (2.8)	15 (1.3)
Transurethral excision, drainage, or removal of a urinary obstruction				33 (3.0)

[a]See footnotes to Appendix table for definitions of other procedures.

Which ambulatory surgeries were associated with the highest charges?

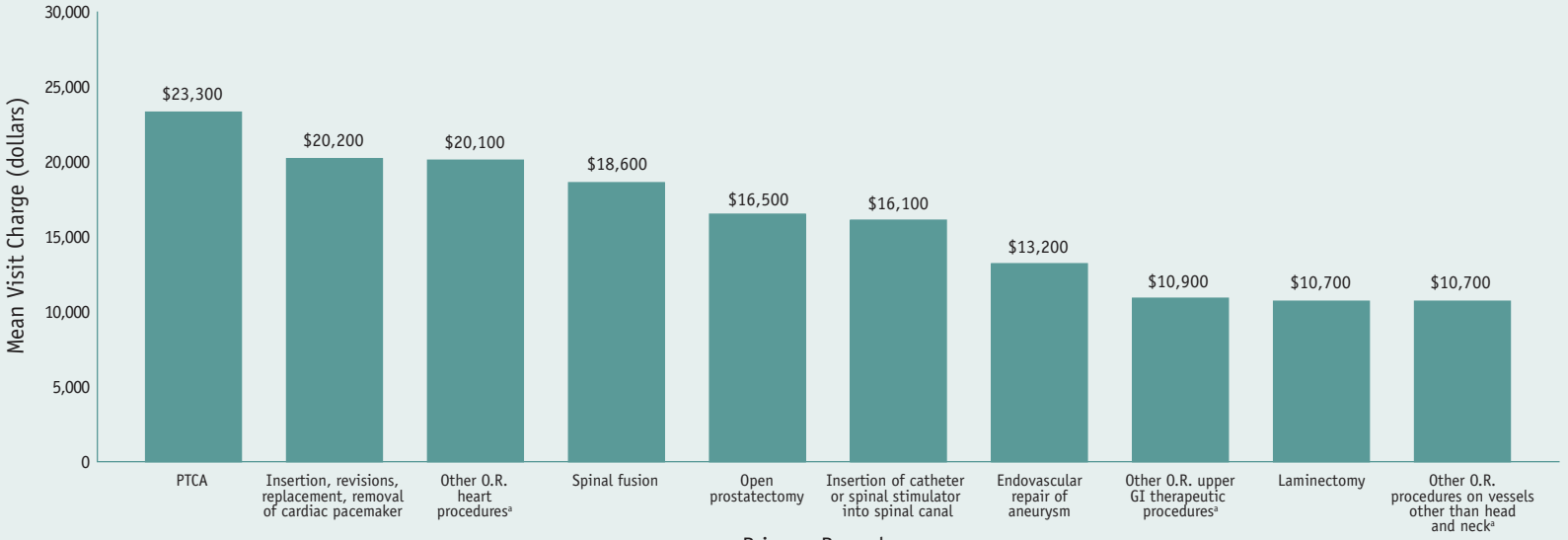
Hospital charges are the amount the hospital bills for the entire visit or stay and do not include most professional (physician) fees. Charges represent what the hospital billed for the case, rather than the amount actually reimbursed. Note that charges reflect the total hospital charge for an encounter (i.e., visit or stay), not the charge for a particular surgery. In addition, the most expensive ambulatory surgeries are not very common. Collectively, the 10 surgeries associated with the most expensive ambulatory surgical visits represented less than 4 percent of all outpatient surgeries.

- In 2003, the average hospital charge for an ambulatory surgical visit was $5,600, compared with $28,300 for an inpatient surgical stay.[ii]
- Five of the top 10 surgeries associated with the most expensive ambulatory surgical visits involved the treatment and diagnosis of the cardiovascular system: percutaneous coronary angioplasty (PTCA), insertion of a cardiac pacemaker or defibrillator, other O.R. heart procedures, endovascular repair of aneurysm, and other O.R. procedures on vessels other than head and neck.

[ii]Inpatient surgical stays are typically more expensive than ambulatory surgery visits because of longer lengths of stay and the use of multiple procedures.

- Two of the 10 most expensive ambulatory surgeries were related to the treatment of musculoskeletal system disorders: spinal fusion and laminectomy.
- Open prostatectomy—a surgery performed only on men—was the fifth most expensive ambulatory surgery.

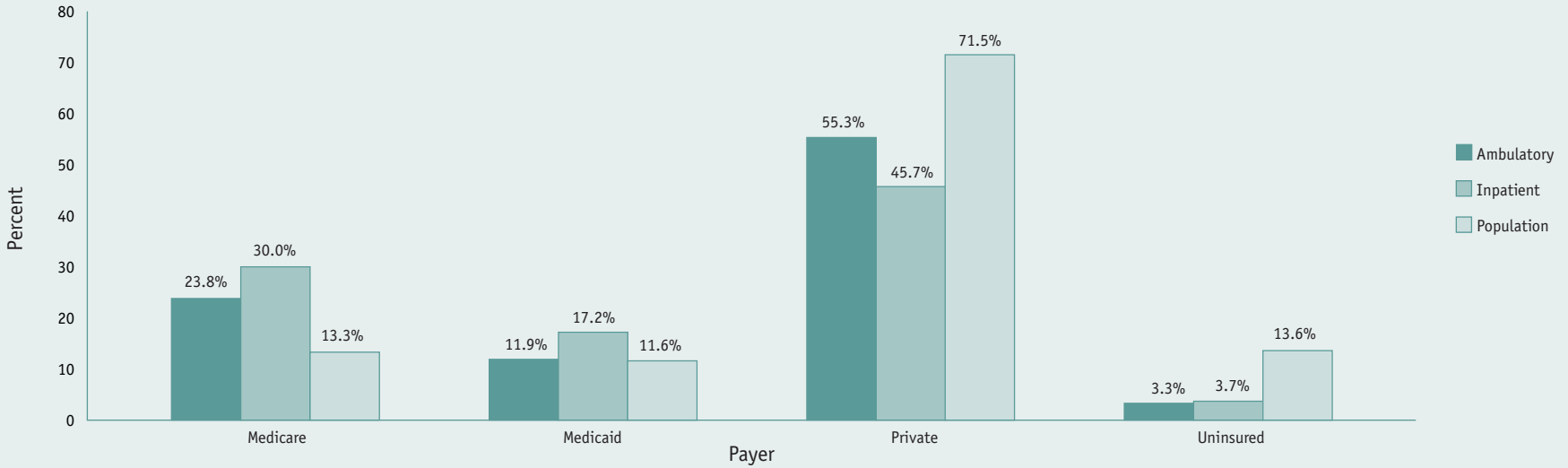
Procedures Associated With the Most Expensive Ambulatory Surgical Visits



[a]See footnotes to Appendix table for definitions of other procedures.

Who was billed for ambulatory surgical visits?

Percentage of Surgical Visits and Stays Billed to Each Payer



Note: A small number of cases covered by other types of insurance such as Workers' Compensation, TRICARE, Title V, and other government programs are excluded. Population figures represent the aggregate 2003 coverage type estimates for the 17 selected States. Individuals can have more than one coverage type; thus, the population percentages shown above do not necessarily sum to 100.

Payer data reflect the expected payer for an ambulatory surgical visit. It is important to note that in the outpatient hospital setting, payers are not billed for specific procedures; rather, they are billed for a patient's full surgical visit. Payer information is presented in the following general payer categories:

Medicare—fee-for-service and managed care Medicare patients.

Medicaid—fee-for-service and managed care Medicaid patients.

Private insurance—Blue Cross, commercial carriers, private health maintenance organizations (HMOs), and preferred provider organizations (PPOs).

Uninsured—insurance status of "self-pay" and "no charge."

- Government insurance programs, primarily Medicare and Medicaid, were billed for about one-third of ambulatory surgical visits. In contrast, nearly half of inpatient surgical stays were billed to Medicare and Medicaid.
- About 12 percent of ambulatory surgical visits and 17 percent of inpatient surgical stays were billed to Medicaid.
- Private insurance was billed for approximately 55 percent of ambulatory surgical visits and nearly 46 percent of inpatient surgical stays.
- Uninsured patients accounted for 3 to 4 percent of ambulatory and inpatient surgical visits and stays.

Medicare

- In 2003, about 14.6 million individuals in the 17 selected States—representing 13 percent of the population in these States—were covered by Medicare.[4]
- Medicare was billed for nearly 24 percent of all ambulatory surgical visits.
- Approximately 3 out of 4 outpatient surgeries related to lens and cataract procedures were billed to Medicare; these procedures constituted the most common ambulatory surgeries performed on patients with Medicare (28.7 percent).
- Among ambulatory surgeries billed to Medicare, 4 of the top 10 procedures were for the treatment and/or diagnosis of the musculoskeletal system: other therapeutic procedures on muscles and tendons (4.1 percent), excision of the semilunar cartilage of the knee (2.1 percent), other O.R. therapeutic procedures on joints (1.9 percent), and partial bone excisions (1.4 percent).
- Transurethral excision, drainage, or removal of urinary obstruction was a top 10 ambulatory surgery billed to Medicare but was not in the top 10 for other payer groups. Medicare was billed for 40 percent of all ambulatory surgeries related to this procedure.

TOP 10 ALL-LISTED PROCEDURES, MEDICARE	NUMBER OF AMBULATORY SURGERIES, IN THOUSANDS (percentage of surgical visits with this procedure)	MEDICARE'S SHARE OF AMBULATORY SURGERIES WITH THIS PROCEDURE (percentage)
Lens and cataract procedures	324 (28.7)	75.2
Other therapeutic procedures on muscles and tendons[a]	46 (4.1)	18.7
Inguinal and femoral hernia repair	35 (3.1)	22.9
Lumpectomy, quadrantectomy of breast	34 (3.0)	22.7
Transurethral excision, drainage, or removal of a urinary obstruction	31 (2.8)	40.4
Decompression of the peripheral nerve	29 (2.6)	23.6
Cholecystectomy and common duct exploration	24 (2.1)	15.9
Excision of semilunar cartilage of knee	23 (2.1)	14.7
Other O.R. therapeutic procedures on joints[a]	22 (1.9)	13.0
Partial excision of the bone	16 (1.4)	17.3

[a]See footnotes to Appendix table for definitions of other procedures.

Medicaid

- About 12.7 million individuals in the 17 selected States, representing 12 percent of the population in these states, were covered by Medicaid in 2003.[4]
- Approximately 12 percent of ambulatory surgical visits were billed to Medicaid.
- Two of the most common ambulatory surgery procedures billed to Medicaid were primarily performed on children: removal of the tonsils and adenoids and myringotomy. Medicaid was billed for approximately 23 percent of outpatient tonsillectomies and/or adenoidectomies and for 27 percent of outpatient myringotomies.
- Other excision of the cervix and uterus (3.0 percent), diagnostic D&C (2.5 percent), and lumpectomy (2.2 percent) were 3 of the most common ambulatory surgeries billed to Medicaid.

TOP 10 ALL-LISTED PROCEDURES, MEDICAID	NUMBER OF AMBULATORY SURGERIES, IN THOUSANDS (percentage of surgical visits with this procedure)	MEDICAID'S SHARE OF AMBULATORY SURGERIES WITH THIS PROCEDURE (percentage)
Tonsillectomy and/or adenoidectomy	42 (9.4)	22.5
Myringotomy (ear tube surgery)	41 (9.2)	27.2
Other therapeutic procedures on muscles and tendons[a]	15 (3.5)	6.3
Cholecystectomy and common duct exploration	15 (3.3)	9.6
Other excision of cervix and uterus[a]	13 (3.0)	10.4
Lens and cataract procedures	12 (2.7)	2.8
Inguinal and femoral hernia repair	11 (2.5)	7.3
Diagnostic dilatation and curettage (D&C)	11 (2.5)	7.8
Other O.R. therapeutic procedures on nose, mouth, and pharynx[a]	10 (2.3)	7.9
Lumpectomy, quadrantectomy of breast	10 (2.2)	6.3

[a]See footnotes to Appendix table for definitions of other procedures.

Private Insurance

- In 2003, about 78.3 million individuals in the 17 selected States, representing 71 percent of the population in these States, were covered by private insurers.[4]
- Private insurers were billed for approximately 55 percent of all ambulatory surgical visits.
- Three of the top 10 ambulatory surgery procedures billed to private insurers were for the treatment and diagnosis of musculoskeletal disorders: other therapeutic procedures on muscles and tendons (5.1 percent), other O.R. therapeutic procedures on the joints (3.8 percent), and excision of the semilunar cartilage of the knee (3.8 percent). Private insurers were billed for more than half of all ambulatory surgeries related to these procedures.
- Private insurers were billed for 71 percent of ambulatory surgeries involving the removal of the tonsils and adenoids and 66 percent of myringotomies.
- Approximately 3 out of 4 ambulatory surgeries involving diagnostic dilatation and curettage (D&C) and other excision of the cervix and uterus were billed to private insurers.
- Nearly 2 out of 3 lumpectomies were billed to private insurers. In addition, private insurers were billed for two-thirds of all cholecystectomies (surgical removal of the gallbladder.)

TOP 10 ALL-LISTED PROCEDURES, PRIVATE INSURANCE	NUMBER OF AMBULATORY SURGERIES, IN THOUSANDS (percentage of surgical visits with this procedure)	PRIVATE INSURER'S SHARE OF AMBULATORY SURGERIES WITH THIS PROCEDURE (percentage)
Other therapeutic procedures on muscles and tendons[a]	145 (5.1)	59.1
Tonsillectomy and/or adenoidectomy	132 (4.6)	71.2
Other O.R. therapeutic procedures on joints[a]	108 (3.8)	65.5
Diagnostic dilatation and curettage (D&C)	107 (3.8)	75.9
Excision of semilunar cartilage of knee	107 (3.8)	67.6
Cholecystectomy and common duct exploration	101 (3.5)	66.5
Other excision of cervix and uterus[a]	99 (3.5)	77.2
Myringotomy (ear tube surgery)	98 (3.4)	65.8
Lumpectomy, quadrantectomy of breast	97 (3.4)	64.2
Other O.R. therapeutic procedures on nose, mouth, and pharynx[a]	93 (3.2)	73.4

[a]See footnotes to Appendix table for definitions of other procedures.

Uninsured

- About 14.9 million individuals in the 17 selected States, representing 14 percent of the population in these States, were uninsured in 2003.[4]
- Just over 3 percent of ambulatory surgical visits occurred among uninsured patients.
- Other O.R. therapeutic procedures on the skin and breast were the most common ambulatory surgeries performed on the uninsured (11.3 percent). Approximately 1 in 6 of these procedures was performed on an uninsured patient.
- Except for lens and cataract procedures, 9 of the top 10 most common ambulatory surgeries performed on uninsured patients were also the most common procedures performed on patients ages 18 to 44 years.

TOP 10 ALL-LISTED PROCEDURES, UNINSURED	NUMBER OF AMBULATORY SURGERIES, IN THOUSANDS (percentage of surgical visits with this procedure)	SHARE OF AMBULATORY SURGERIES THAT ARE UNINSURED WITH THIS PROCEDURE (percentage)
Other O.R. therapeutic procedures on skin and breast[a]	17 (11.3)	16.7
Other therapeutic procedures on muscles and tendons[a]	8 (4.9)	3.1
Cholecystectomy and common duct exploration	6 (3.6)	3.7
Inguinal and femoral hernia repair	5 (3.4)	3.4
Lumpectomy, quadrantectomy of breast	5 (3.2)	3.3
Lens and cataract procedures	5 (3.2)	1.1
Other excision of cervix and uterus[a]	4 (2.8)	3.3
Other O.R. therapeutic procedures on nose, mouth, and pharynx[a]	3 (2.3)	2.8
Diagnostic dilatation and curettage (D&C)	3 (2.2)	2.4
Other O.R. therapeutic procedures on joints[a]	3 (1.7)	1.6

[a]See footnotes to Appendix table for definitions of other procedures.

PART II:
Detailed Statistics for Selected Procedures and Populations

Procedures influenced by technological advances

ALL-LISTED PROCEDURES	TOTAL NUMBER OF AMBULATORY SURGICAL VISITS (in thousands)	PERCENT AMBULATORY	MEAN CHARGE PER VISIT
Appendectomy	22	15.8	$9,500
Cholecystectomy and common duct exploration	152	51.5	$8,100
Hernia repair	153	89.1	$5,800
Bariatric surgery	1	3.2	$15,100

The development of various technologies, such as new surgical techniques, devices, and pharmaceuticals (especially anesthesia), have changed the pattern of care for surgeries in two important ways: (1) new and emerging technologies have prompted a shift from inpatient care to ambulatory care, and (2) technological advances have created new markets and patterns of care.[2] For example, the laparoscope (a long metal tube with a camera lens at the end) is responsible for the shift to outpatient settings for surgeries such as hernia repair or removal of the gallbladder and appendix. Consequently, as surgical tools and technologies advance, the surgeries that previously required extensive incisions are now less invasive and less costly and also require less time.

Examples of surgeries that reflect evolving patterns of care because of advances in technology include:

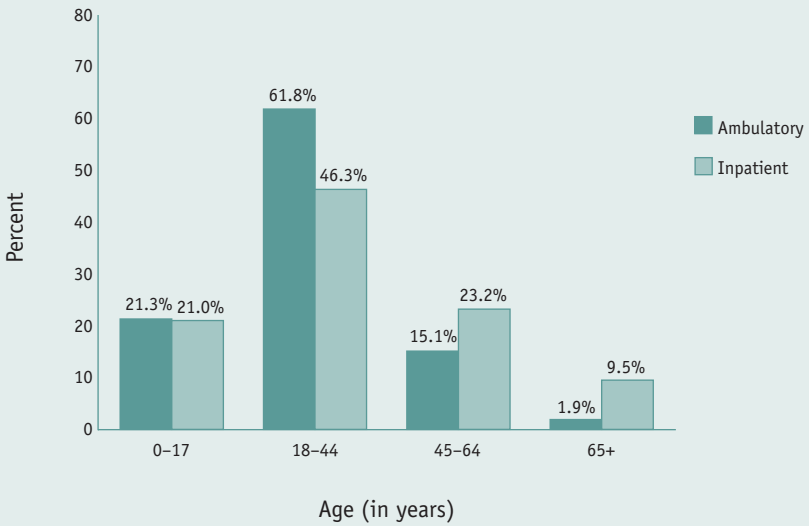
- **Appendectomy**—surgical removal of the appendix
- **Cholecystectomy**—surgical removal of the gallbladder
- **Hernia repair**—surgical repair of the abdominal wall
- **Bariatric surgery**—surgical reduction of the stomach

Appendectomy

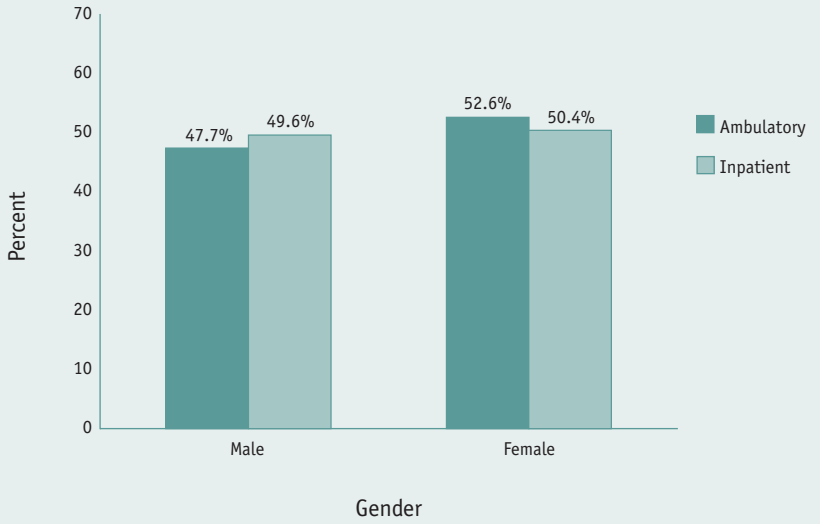
Appendectomy—the surgical removal of the appendix—is almost always performed as an emergency surgery. However, the use of the laparoscope allows a surgeon to perform the procedure without making a large incision in the abdomen. In most cases, a laparoscopic appendectomy can be completed in an outpatient setting within 45 minutes. The patient is released the same day and can resume normal activity more quickly than a patient with an open abdominal surgery. Open and laparoscopic techniques are thought to be comparable in terms of low rates of complications.[8] However, length of stay, length of overall recovery, and infection rates are reportedly lower with laparoscopic appendectomy.[8]

- Approximately 16 percent of appendectomies were performed on an outpatient basis in 2003.
- The mean age for an outpatient appendectomy was 30 years—about 6 years younger than the mean age for inpatient appendectomies (data not shown).
- Over 98 percent of appendectomies were performed on patients younger than 65 (data not shown); more than 6 in 10 outpatient appendectomies were performed on patients ages 18 to 44.
- Although about 10 percent of all appendectomies occurred in patients 65 and older, the proportion of inpatient appendectomies performed on this age group was 5 times higher than the proportion of outpatient appendectomies performed on older adults (9.5 percent versus 1.9 percent).
- Although the number of inpatient appendectomies performed on males and females was virtually equal, outpatient appendectomies were performed at a somewhat higher rate on females compared with males (52.6 percent versus 47.4 percent).
- Approximately two-thirds of all appendectomies were billed to private insurers. Compared with inpatient appendectomies, a greater proportion of outpatient appendectomies were billed to private insurers (73.5 percent versus 62.5 percent).

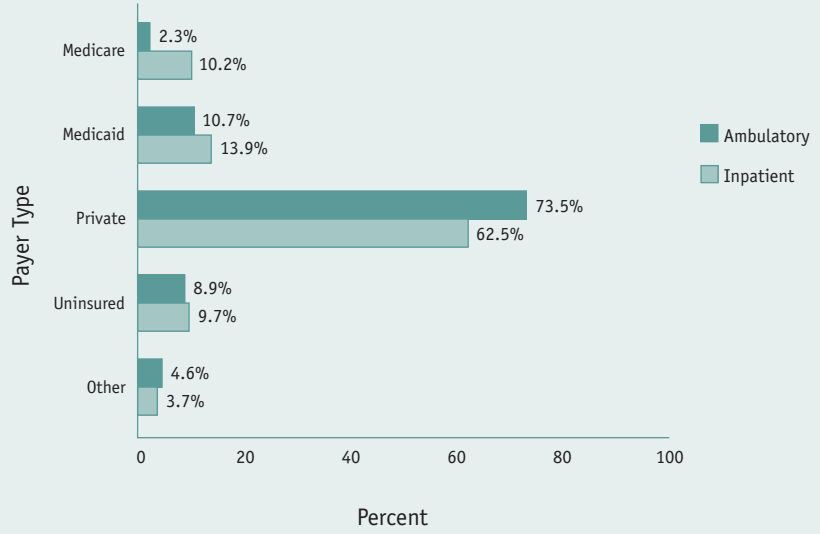
Percentage of Visits and Stays for Appendectomies by Age Group



Percentage of Visits and Stays for Appendectomies by Gender



Percentage of Visits and Stays for Appendectomies Billed to Payer

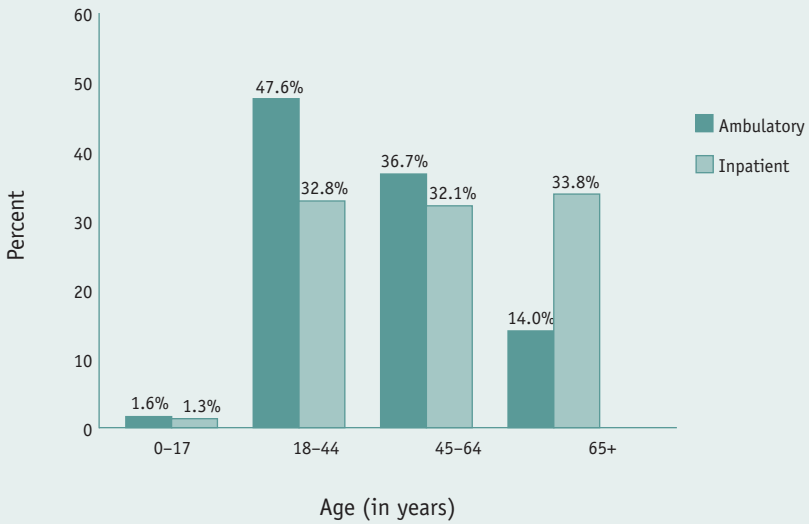


Cholecystectomy

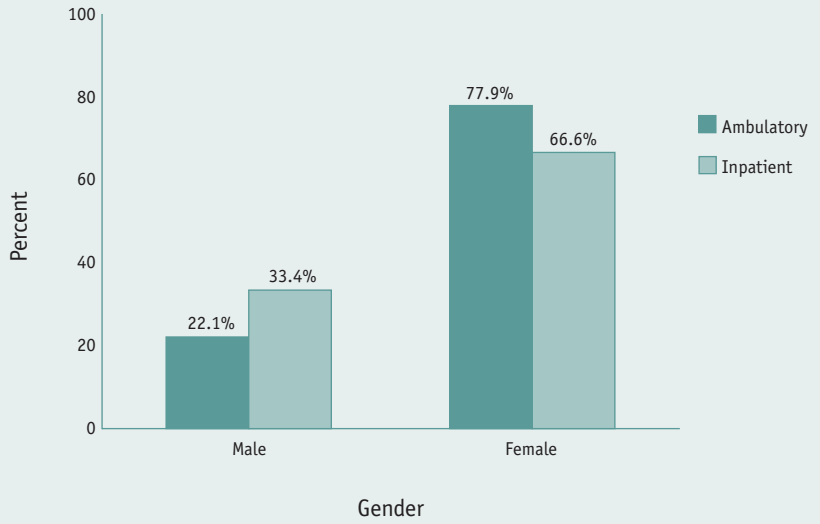
A cholecystectomy is the surgical removal of the gallbladder. During a laparoscopic cholecystectomy, three long instruments are inserted into the body through small incisions, and, using the laparoscope to view the inside of the body, the surgeon is able to remove the gallbladder. When a laparoscope is used, the patient is released from the hospital within 24 hours, or sometimes sooner, depending on their ability to ambulate. Recovery requires approximately 2 weeks. The conventional surgery requires a long incision of the abdomen, and the recovery time is between 4 and 8 weeks. Researchers believe that at least half of all laparoscopic cholecystectomies can be performed on an outpatient basis.[9] However, use of this procedure in an ambulatory setting may be limited by physician training and patient reluctance.[9]

- In 2003, half of all surgeries involving a cholecystectomy procedure were performed on an outpatient basis.
- The mean age for an outpatient cholecystectomy was 8 years less than the mean age for an inpatient cholecystectomy—46 years versus 54 years (data not shown).
- Almost half of outpatient cholecystectomies were performed on patients ages 18 to 44, followed closely by patients between 45 and 64 years of age, who underwent 37 percent of these procedures. An additional 14 percent of outpatient cholecystectomies were performed on patients 65 and above.
- The proportion of inpatient cholecystectomies performed on patients 65 and older (33.8 percent) was nearly 2.5 times the proportion of outpatient cholecystectomies performed for this age group (14.0 percent).
- Nearly 3 out of 4 cholecystectomy procedures were performed on females; this group accounted for nearly 78 percent of all cholecystectomies performed on an outpatient basis.
- Two out of 3 outpatient cholecystectomies were billed to private insurers, while Medicare was billed for only 15 percent of these ambulatory surgeries.
- Compared with inpatient cholecystectomy procedures, the proportion of outpatient cholecystectomies billed to private insurers was considerably higher (65.6 percent versus 43.4 percent). Consequently, the proportion of outpatient procedures billed to Medicare was lower than the proportion of inpatient procedures billed to Medicare (15.0 percent versus 33.7 percent, respectively).

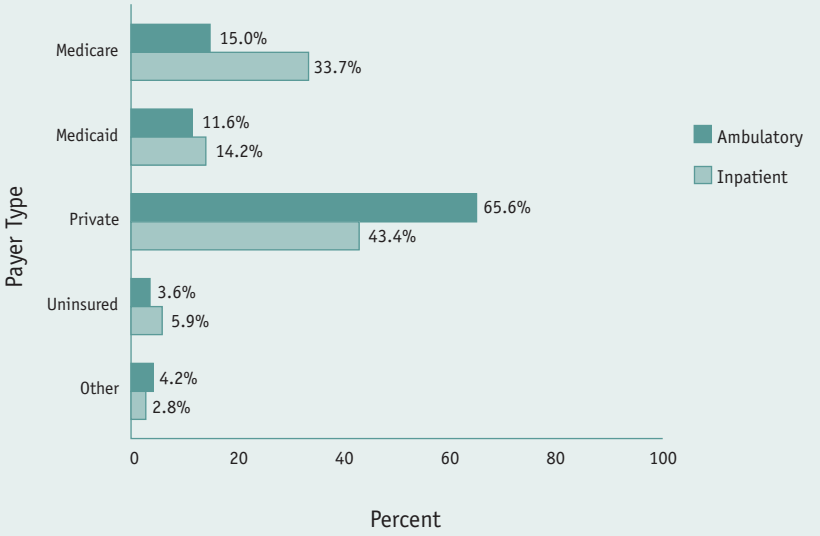
Percentage of Visits and Stays for Cholecystectomies by Age Group



Percentage of Visits and Stays for Cholecystectomies by Gender



Percentage of Visits and Stays for Cholecystectomies Billed to Payer

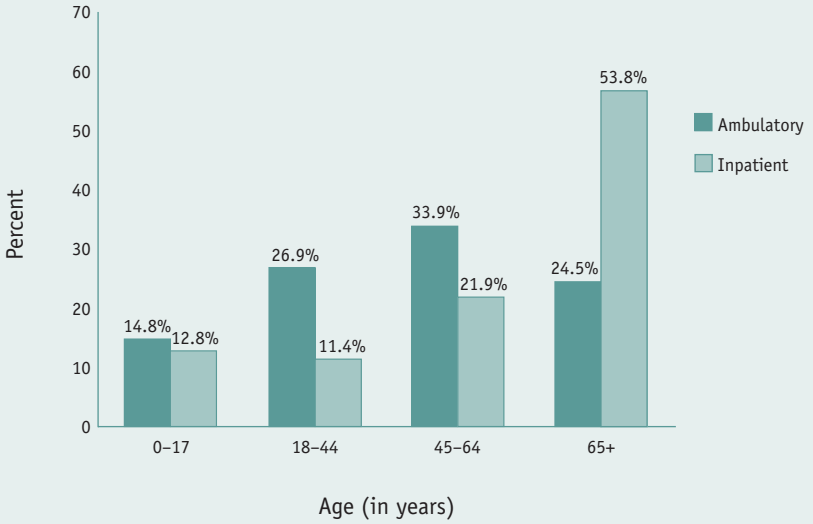


Hernia Repair

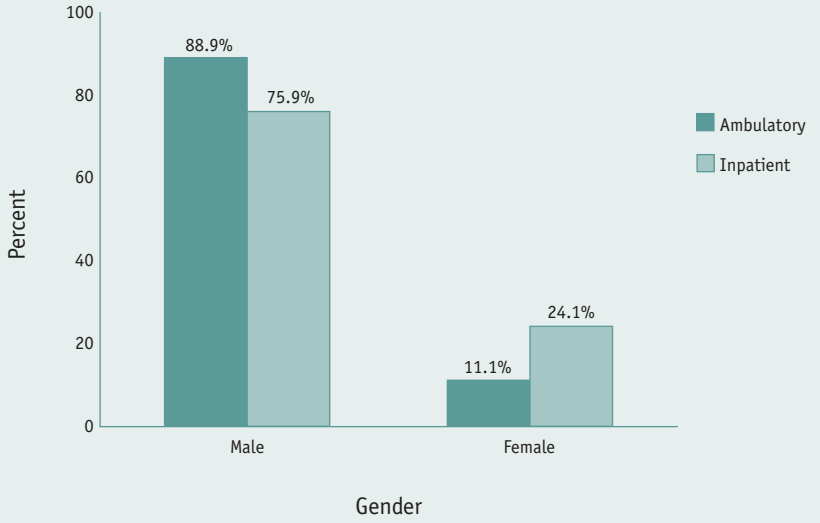
A hernia occurs when tissue protrudes from a torn or damaged abdominal wall. An open hernia repair is typically performed in an inpatient setting and requires a long incision in the abdominal area so that the torn abdominal wall can be sewn together. Alternatively, laparoscopic hernia repair is less invasive and requires three small incisions—each no more than 1 centimeter long. Instead of sewing the abdominal wall, a piece of mesh is inserted over the torn area, reducing patient discomfort and recovery time. Unlike open hernia repair, which uses local, spinal, or general anesthesia, laparoscopic hernia repair requires general anesthesia and is typically done in an ambulatory surgery setting.

- Nearly 89 percent of hernia surgeries were performed on an outpatient basis in 2003.
- The mean age for an outpatient hernia repair was 46 years—12 years less than the mean age for an inpatient hernia repair (data not shown).
- One-third of outpatient hernia repairs occurred in patients ages 45 to 64—slightly more than for patients ages 18 to 44 (26.9 percent) and for patients 65 and older (24.5 percent).
- The proportion of inpatient hernia repairs performed on patients 65 and older (53.8 percent) was more than twice the proportion of outpatient hernia repairs performed on this age group (24.5 percent).
- Nearly 9 out of 10 outpatient hernia repairs occurred in males.
- The proportion of inpatient hernia repairs performed on females was more than twice the proportion of outpatient hernia repairs performed on females (24.1 percent versus 11.1 percent).
- Private insurers were billed for more than 58 percent of outpatient hernia repairs. Medicare was billed for nearly 1 in 4 of these ambulatory surgeries. Uninsured patients accounted for less than 4 percent of outpatient hernia repair surgeries.
- Private insurers were billed for the highest proportion of outpatient hernia repairs (58.3 percent). In contrast, Medicare was billed for the highest proportion of hernia repairs performed on an inpatient basis (50.5 percent).

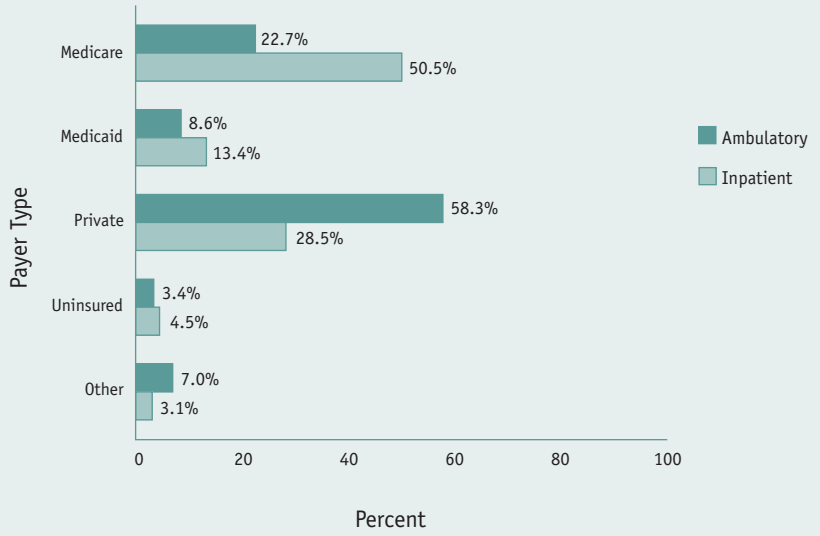
Percentage of Visits and Stays for Hernia Repair Surgeries by Age Group



Percentage of Visits and Stays for Hernia Repair Surgeries by Gender



Percentage of Visits and Stays for Hernia Repair Surgeries Billed to Payer



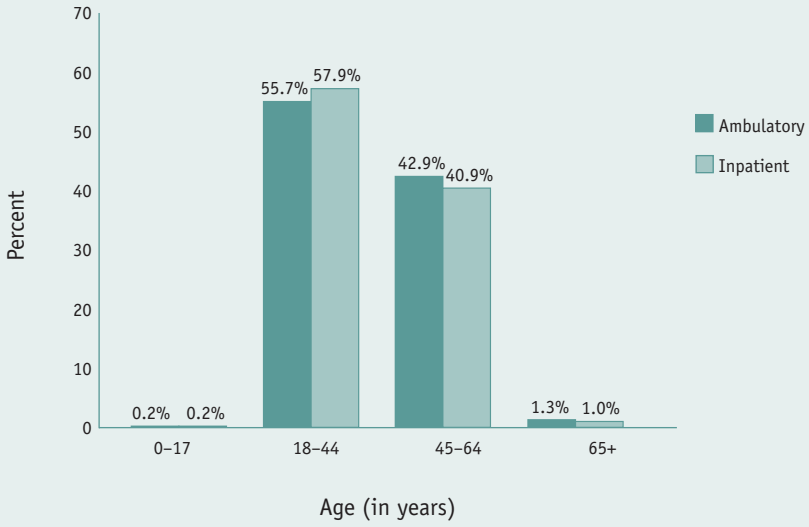
Bariatric Surgery

Bariatric surgical procedures are major gastrointestinal operations used to treat morbid obesity. Several different types of bariatric weight-loss surgical procedures exist, which are known collectively as bariatric surgery. As more people become aware of complications from obesity, increasing numbers of affected individuals are opting for this surgery to lose weight and thereby reduce their risk of diabetes, high blood pressure, heart disease, and weight-related musculoskeletal issues. Due to a marked increase in the number of bariatric surgeries performed in the United States, health plans and Medicare have begun classifying obesity as a disease and providing coverage for these procedures.[10]

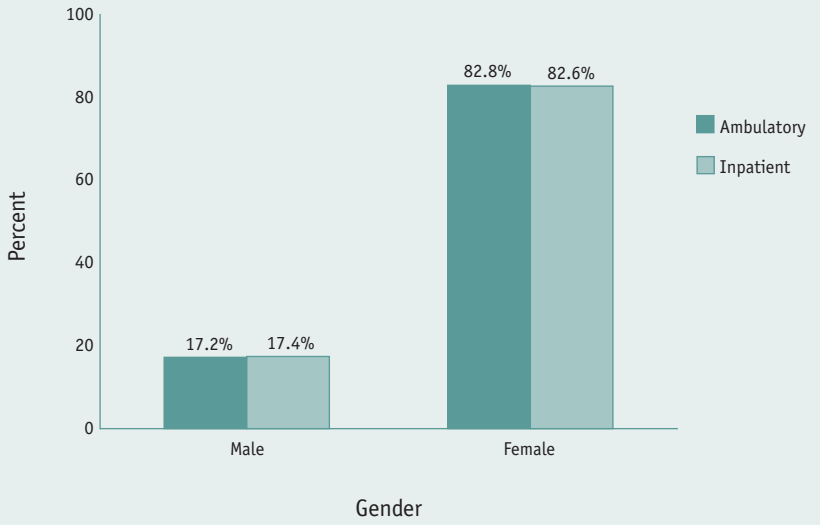
Recently, laparoscopic techniques have enabled more bariatric surgeries to be performed in an outpatient setting. Although the gastric bypass is still called the "gold standard" in weight-loss surgery, many hospitals are now promoting an alternative procedure known as a "lap band." During this minimally invasive outpatient procedure, surgeons use a laparoscope to wrap a band around the stomach in order to make it smaller. Lap bands are more appealing to some patients because traditional gastric bypass procedures require inpatient admission and longer recovery times. In some cases, hospitals are also using laparoscopic techniques to perform gastric bypass procedures in the outpatient setting.

- In 2003, only 3 percent of bariatric surgeries were performed on an outpatient basis (data not shown).
- The mean age for bariatric surgery was approximately 42 years, regardless of inpatient or outpatient status (data not shown).
- Almost all bariatric surgeries performed in an outpatient setting occurred in patients ages 18 to 64 (55.7 percent in patients ages 18 to 44 and 42.9 percent in patients ages 45 to 64).
- Nearly 83 percent of outpatient bariatric surgeries were performed on females.
- Private insurers were billed for 8 out of 10 outpatient bariatric surgeries. Only about 5 percent of these ambulatory surgeries were billed to government insurance programs (i.e., Medicare and Medicaid).
- The rate of outpatient bariatric surgeries billed to uninsured patients was almost 5 times the rate of inpatient bariatric surgeries billed to this group (11.6 percent versus 2.4 percent). This finding may reflect surgeries among patients who are otherwise insured, but opt to self-pay for outpatient bariatric surgery, which is often less expensive, when bariatric surgery is not a covered benefit.

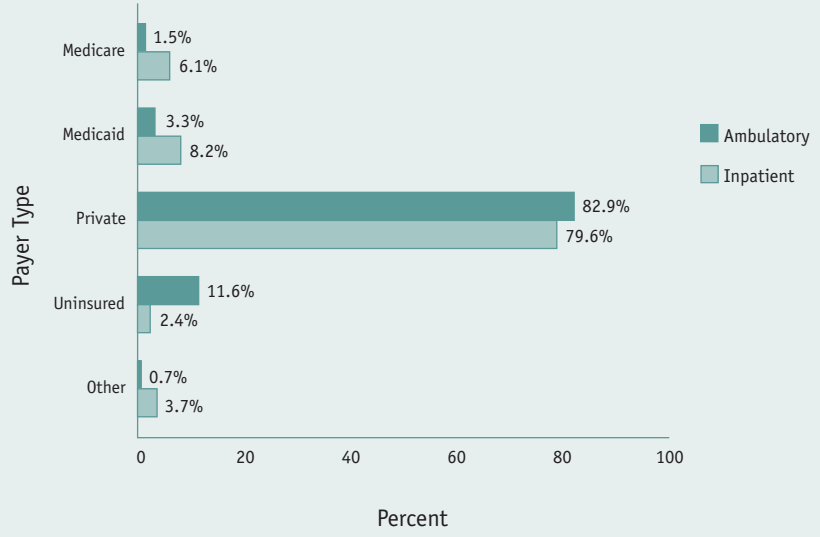
Percentage of Visits and Stays for Bariatric Surgeries by Age Group



Percentage of Visits and Stays for Bariatric Surgeries by Gender



Percentage of Visits and Stays for Bariatric Surgeries Billed to Payer



Ambulatory surgeries specific to certain populations

This section highlights ambulatory surgeries specific to select populations —children, women, or men—and may also reflect changing patterns of care as surgeries shift from the inpatient setting to an ambulatory setting. Some procedures, such as mastectomy and transurethral prostatectomy (TURP), are just beginning to emerge as feasible in the ambulatory setting.

Examples of surgical procedures specific to selected populations include:

- **Tonsillectomy and/or adenoidectomy**—surgical removal of the tonsils and/or adenoids
- **Mastectomy**—surgical removal of the breast
- **Hysterectomy**—surgical removal of the uterus
- **Transurethral prostatectomy**—surgical treatment of an enlarged prostate

ALL-LISTED PROCEDURES	TOTAL NUMBER OF AMBULATORY SURGICAL VISITS (in thousands)	PERCENT AMBULATORY	AMBULATORY SURGICAL VISITS PER 100,000 POPULATION	MEAN CHARGE PER VISIT
Tonsillectomy and/or adenoidectomy in children	150	96.3	206	$3,700
Mastectomy in women	7	21.6	14	$9,100
Hysterectomy in women	18	8.6	38	$9,700
Transurethral prostatectomy (TURP) in men	8	20.4	18	$7,000

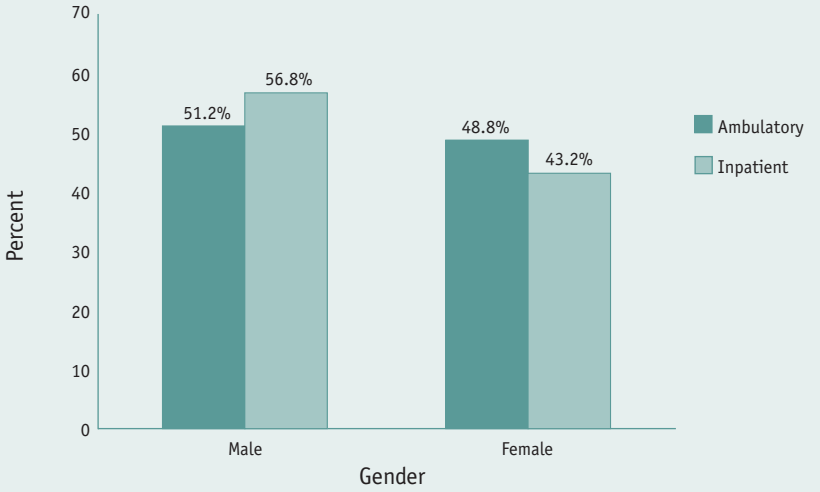
Note: The denominator population for tonsillectomy and/or adenoidectomy rates is limited to the population of children ages 0 to 17 in the 17 selected States.[9] Similarly, the denominator population is limited to the total female population for mastectomy and hysterectomy rates, and is limited to the total male population for TURP rates.[8]

Tonsillectomy and/or Adenoidectomy in Children

Tonsillectomy and/or adenoidectomy is the surgical removal of the tonsils and/or adenoids. This procedure is typically performed in children when tonsils and adenoids become chronically infected and obstruct breathing. The patient is given general anesthesia and the tissue is removed through the mouth. Post-surgery bleeding is usually negligible, and patients are released within 8 to10 hours after surgery. As recently as 5 years ago, the performance of tonsillectomy and adenoidectomy in an ambulatory setting was considered controversial. However, many recent studies have shown that with adequate criteria for patient selection and careful observation after surgery, these procedures can be safely performed as an outpatient surgery.[11,12]

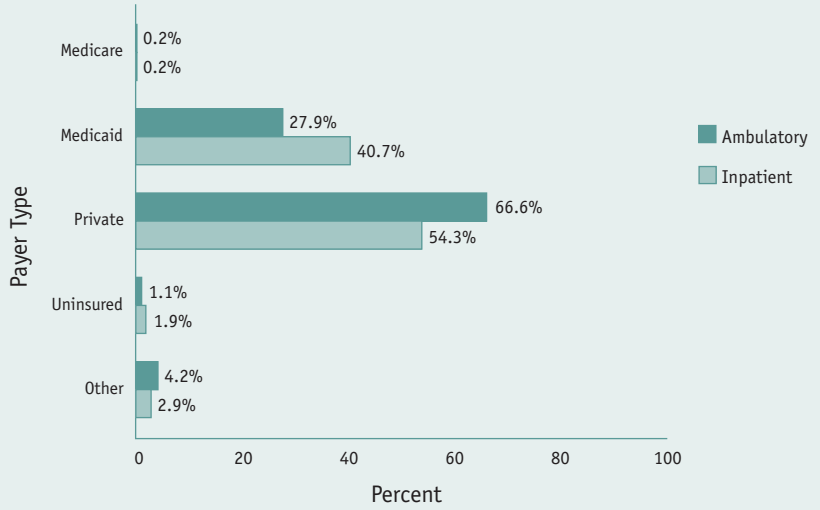
- In 2003, 96 percent of all tonsillectomies and/or adenoidectomies performed in children ages 0 to 17 occurred in an outpatient setting (data not shown).
- The mean age for a tonsillectomy and/or adenoidectomy was approximately 7 years, regardless of inpatient or outpatient status (data not shown).
- The percentage of outpatient tonsillectomies and/or adenoidectomies performed in boys and girls ages 0 to 17 was virtually equal. However, in an inpatient setting, these procedures were performed more often in boys, as compared with girls (56.8 versus 43.2 percent).
- Two out of 3 of these surgeries performed in an outpatient setting were billed to private insurers. Medicaid was billed for approximately 28 percent, while uninsured patients accounted for only 1 percent of outpatient tonsillectomy and/or adenoidectomy surgeries.
- Compared with inpatient tonsillectomies and/or adenoidectomies, the proportion of these surgeries billed to private insurers was considerably higher (66.6 percent versus 54.3 percent). Consequently, the proportion of outpatient procedures billed to Medicaid was lower than the proportion of inpatient procedures billed to Medicaid (27.9 percent versus 40.7 percent, respectively).

Percentage of Visits and Stays for Tonsillectomies and/or Adenoidectomies by Gender



Note: Data are limited to patients 0–17 years.

Percentage of Visits and Stays for Tonsillectomies and/or Adenoidectomies Billed to Payer



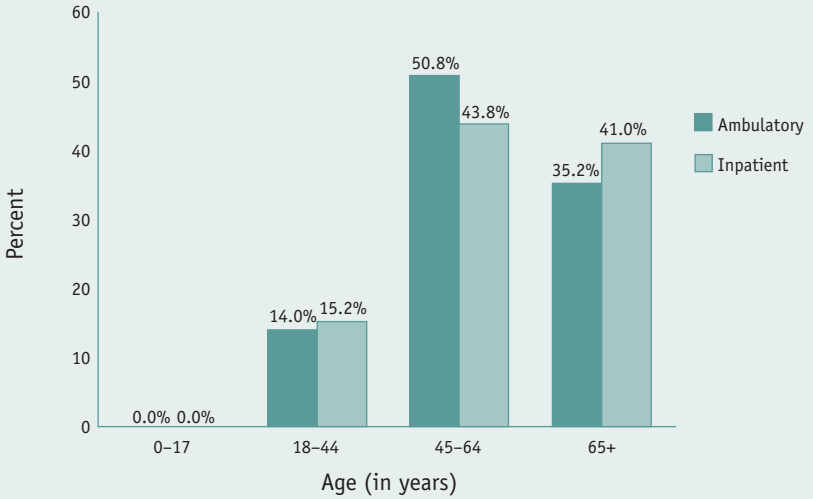
Note: Data are limited to patients 0–17 years.

Mastectomy in Women

Many women with breast cancer undergo surgery as part of a standard course of treatment. Advances in breast cancer treatment and trends toward more breast-conserving procedures have resulted in fewer procedures—including many surgeries—that require hospitalization. While mastectomy, or complete removal of a breast, is typically performed in a hospital setting, specialized outpatient facilities are sometimes used. Receiving a mastectomy in an outpatient setting has been a controversial and emotional issue, sparking public debate and legislative action in many States. Currently, 20 States have mandated minimum inpatient stay laws for mastectomy.[13] However, some studies have shown that women who choose to have outpatient mastectomies experience better recovery and less adverse side effects.[14] In general, an outpatient mastectomy is recommended for younger women in good health and with early-stage breast cancer.

- Approximately 1 in 5 mastectomies received by women in 2003 was performed in an outpatient setting (data not shown).
- The mean age for a woman receiving either an outpatient or inpatient mastectomy was about 59 years (data not shown).
- Outpatient mastectomies were performed most often on women 45 to 64 years of age (50.8 percent). Approximately 35 percent of outpatient mastectomies were performed on women 65 and older.
- Compared with inpatient mastectomies, the proportion of these surgeries performed on patients 45 to 64 years of age was higher (50.8 percent versus 43.8 percent). As a result, the proportion of outpatient mastectomies performed on women ages 65 and older was lower than the proportion of inpatient procedures performed on this age group (35.2 percent versus 41.0 percent), respectively.

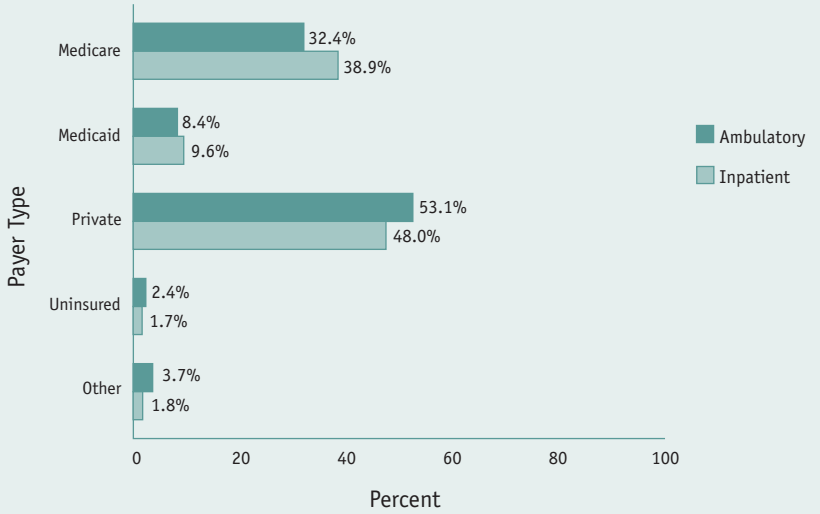
Percentage of Visits and Stays for Mastectomies by Age Group



Note: Data are limited to female patients only.

- Private insurers were billed for more than half of all outpatient mastectomies. Medicare was billed for almost one-third of outpatient mastectomies.
- The percentage of outpatient mastectomies billed to private insurers was higher than the percentage of inpatient mastectomies billed to these payers (53.1 percent versus 48.0 percent, respectively). Conversely, inpatient mastectomies were billed at a higher percent to government payers (i.e., Medicare and Medicaid), as compared with outpatient mastectomies (48.5 percent versus 40.8 percent, respectively).

Percentage of Visits and Stays for Mastectomies Billed to Payer



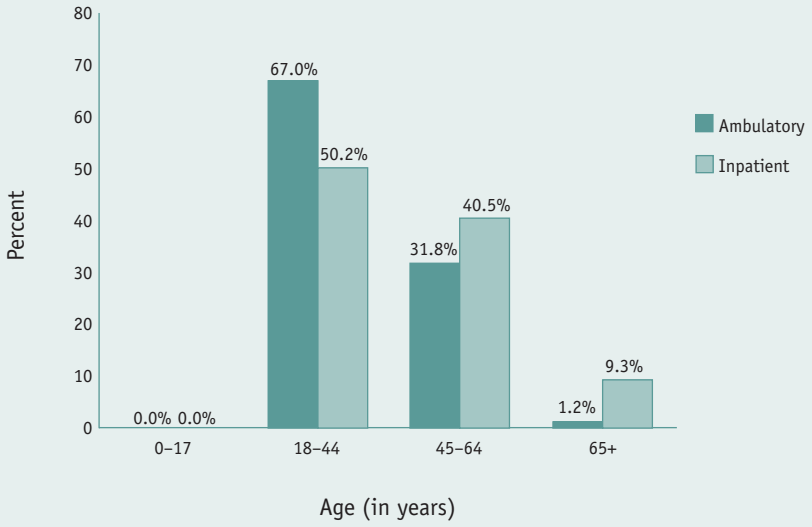
Note: Data are limited to female patients only.

Hysterectomy in Women

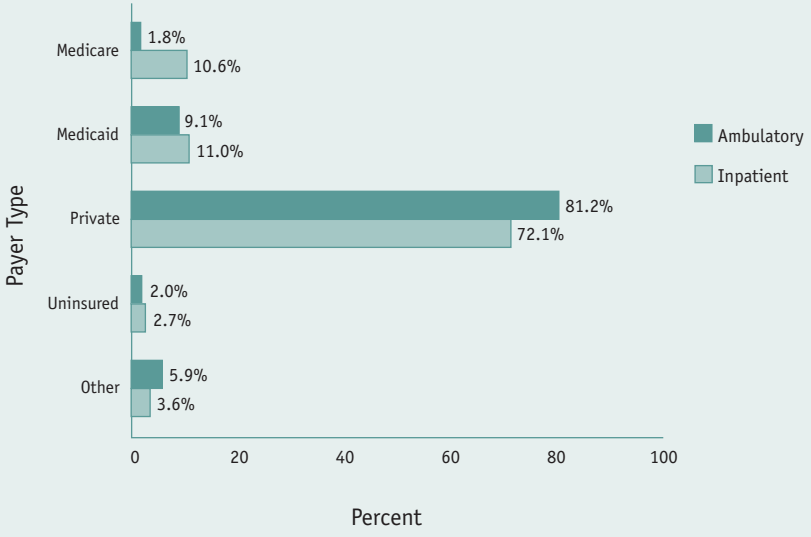
Hysterectomy, or the surgical removal of the uterus, can be performed with the use of the laparoscope. Instead of creating a large incision on the abdomen through which the uterus is removed, a laparoscope is inserted through small incisions into the abdomen to either assist in the vaginal removal of the uterus, or more recently, completely remove the uterus using the laparoscopic approach. The laparoscopic-assisted vaginal hysterectomy and the more recently developed complete laparoscopic hysterectomy can be performed in an outpatient setting since they allow faster recovery times for women.

- In 2003, 9 percent of hysterectomies were performed on an outpatient basis (data not shown).
- The mean age for an outpatient hysterectomy was 41 years, or 5 years less than the mean age for an inpatient hysterectomy (data not shown).
- Over half of all hysterectomies were performed on women 18 to 44 years of age, followed by nearly 40 percent for women ages 45 to 64. However, this distribution varied depending on inpatient or outpatient setting: women ages 18 to 44 accounted for 67 percent of outpatient hysterectomies. Less than one-third of these procedures performed in an outpatient venue occurred in women 45 to 64 years of age.
- Private insurers were billed for approximately 8 out of 10 outpatient hysterectomies. Government insurance programs (i.e., Medicare and Medicaid) were billed for almost 11 percent of these surgeries performed in an outpatient setting. However, nearly 22 percent of inpatient hysterectomies were billed to Medicare or Medicaid.

Percentage of Visits and Stays for Hysterectomies by Age Group



Percentage of Visits and Stays for Hysterectomies Billed to Payer

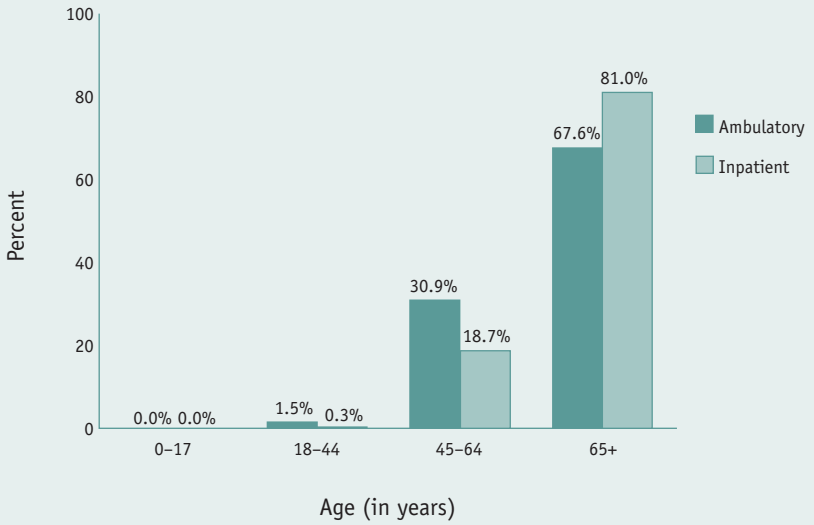


Transurethral Prostatectomy in Men

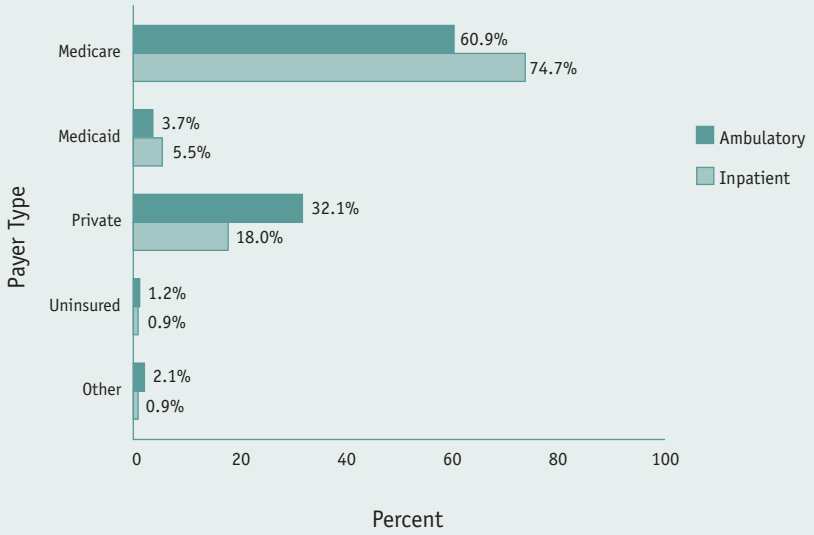
Transurethral prostatectomy (TURP) is the most common type of prostate surgery in men and is most often used to treat benign enlargement of the prostate gland. During this procedure, the prostate tissue is removed piece by piece using a special tool inserted through the urethra. Because there are no incisions, the recovery time is between 1 and 3 days.

- Approximately 20 percent of TURPs were performed on an outpatient basis in 2003 (data not shown).
- Patients receiving TURPs on an outpatient basis had a mean age of 69 years, slightly lower than the mean age for patients receiving inpatient TURPs, 73 years (data not shown).
- Men ages 45 and older accounted for nearly all outpatient TURP procedures. More than 2 out of 3 of these procedures performed in an outpatient setting occurred among men 65 and older.
- The proportion of outpatient TURPs performed on men ages 45 to 64 (30.9 percent) was higher than the proportion of inpatient TURPs performed in this age group (18.7 percent). Conversely, the proportion of inpatient TURPs performed on men 65 and older (81.0 percent) was higher than the proportion of outpatient TURPs performed in this age group (67.6 percent).
- Medicare was billed for more TURP procedures than any other payer, regardless of inpatient or outpatient status. Approximately 1 in 5 TURPs was billed to private insurers. However, the proportion of these procedures performed on an outpatient basis and billed to private insurers was about 32 percent, compared with 18 percent of inpatient TURPs billed to private insurers.

Percentage of Visits and Stays for TURPs by Age Group



Percentage of Visits and Stays for TURPs Billed to Payer



Source of Data for This Report

The results presented in this report are drawn from the Healthcare Cost and Utilization Project (HCUP), a Federal-State-Industry partnership to build a multi-State health care data system. This partnership is sponsored by the Agency for Healthcare Research and Quality (AHRQ) and is managed by staff in AHRQ's Center for Delivery, Organization, and Markets (CDOM). HCUP is based on data collected by individual HCUP Partners (including State departments of health, hospital associations, and private agencies), which provide these data to AHRQ. HCUP would not be possible without statewide data collection projects and their partnership with AHRQ.

For the year 2003, 38 HCUP Partners contributed their data to AHRQ, where all files were validated and converted into a uniform format. The uniform HCUP databases enable comparative studies of health care services and the use and cost of hospital care, including:

- Effects of market forces on hospitals and the care they provide.
- Variations in medical practice.
- Effectiveness of medical technology and treatments.
- Use of services by special populations.

HCUP includes short-term, non-Federal, community hospitals, as defined by the American Hospital Association (AHA). This definition encompasses general hospitals and specialty facilities, such as pediatric, obstetrics-gynecology, short-term rehabilitation, and oncology hospitals. Long-term care and psychiatric hospitals are excluded, as are substance abuse treatment facilities.

[iii]Although 20 States contributed to both the 2003 SASD and SID, only 17 used the ICD-9-CM procedure codes (rather than CPT codes) necessary for this report.

HCUP includes several sets of inpatient and outpatient databases for health services research. This report is based on the 2003 State Inpatient Databases (SID) and the 2003 State Ambulatory Surgery Databases (SASD). The SID contain the universe of the inpatient discharge abstracts in 38 Partner States, translated into a uniform format to facilitate multi-State comparisons and analyses. The SASD capture surgeries performed on the same day in which patients are admitted and released. All of the SASD databases from 20 Partner States include abstracts from hospital-affiliated ambulatory surgery sites. Some contain the universe of ambulatory surgery encounter abstracts for that State, including records from both hospital-affiliated and freestanding surgery centers.

This report evaluates inpatient and outpatient surgery data from 17 selected States that contributed data to both the 2003 SASD and SID: Colorado, Connecticut, Georgia, Indiana, Kentucky, Minnesota, Missouri, Nebraska, New Hampshire, New Jersey, New York, North Carolina, South Carolina, Tennessee, Utah, Vermont, and Wisconsin.[iii]

Methods

This Fact Book is based on data in the HCUP SID and the SASD. Selected methodological issues relevant to this report follow.

Unit of Analysis

For this report, any reference to "visit" or "hospital stay" indicates that the unit of analysis is the record rather than the surgical procedure. Any reference to "surgeries" indicates that the unit of analysis is a major operating room procedure. Multiple surgical procedures can be listed on a record in the SID and SASD. Frequencies and rankings of surgeries are based on all-listed—that is, all surgical procedures listed on the record—and de-duplicated procedures. If a particular procedure occurs multiple times during the same surgical visit or hospital stay, it is counted only once.

Inclusion Criteria

Records from the SASD meeting the following criteria were included:

- Presence of at least 1 surgical procedure as defined by an *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD-9-CM) procedure code in the range of 00.50-86.99 or 88.40-88.59.
- Containing at least 1 major therapeutic or diagnostic operating room procedure as defined by the procedure classes described below.
- Length of stay of 0 or 1 day.
- Originating from a hospital-based ambulatory surgery center having at least 200 ambulatory surgical visits.
- Obtained from a facility designated as a short-term, community, non-rehabilitation hospital.

Records from the SID meeting similar criteria were included:

- Presence of at least 1 surgical procedure as defined by an ICD-9-CM procedure code in the range of 00.50-86.99 or 88.40-88.59.
- Containing at least 1 major therapeutic or diagnostic operating room procedure as defined by the procedure classes described below.
- Originating from a hospital with at least 200 inpatient surgical stays.
- Obtained from a facility designated as a short-term, community, non-rehabilitation hospital.

Procedure Classes

The Procedure Classes tool provides an easy way to categorize ICD-9-CM procedure codes into 1 of 4 broad categories: major diagnostic, major therapeutic, minor diagnostic, and minor therapeutic. This tool was created to facilitate health services research on hospital procedures using administrative data. All ICD-9-CM procedure codes are assigned to 1 of the following categories:

- Major Diagnostic—All procedures considered valid operating room procedures by the Diagnosis Related Group grouper and that are performed for diagnostic reasons.
- Major Therapeutic—All procedures considered valid operating room procedures by the Diagnosis Related Group grouper and that are performed for therapeutic reasons.
- Minor Diagnostic—Non-operating room procedures that are diagnostic.
- Minor Therapeutic—Non-operating room procedures that are therapeutic.

This Fact Book examines only ambulatory and inpatient hospital discharge records where at least one ICD-9-CM procedure code was classified as either a major diagnostic or major therapeutic procedure.

More detailed information on the Procedure Classes tool can be obtained from the HCUP User Support Web site at: **http://www.hcup-us.ahrq.gov/toolssoftware/procedure/procedure.jsp.**

Procedures and Clinical Classifications Software (CCS)

Surgical procedures are recorded within the HCUP databases using ICD-9-CM codes. Although ICD-9-CM codes may be used to provide descriptive statistics, the granular nature of these codes is difficult to summarize. Thus, for this report, the AHRQ-developed Clinical Classifications Software (CCS) is used to aggregate ICD-9-CM procedure codes into a limited number of clinically meaningful categories for most tables. More detailed information on CCS can be downloaded from the HCUP User Support Web site at: **http://www.hcup-us.ahrq.gov/home.jsp.**

Payer

Payer is the expected payer for the surgical visit or hospital stay. To make coding uniform across all HCUP data sources, "Payer" combines detailed categories into more general groups:

- Medicare includes fee-for-service and managed care Medicare patients.
- Medicaid includes fee-for-service and managed care Medicaid patients.
- Private insurance includes Blue Cross, commercial carriers, and private HMOs and PPOs.
- Uninsured includes an insurance status of "self-pay" and "no charge."
- Other includes Workers' Compensation, TRICARE/CHAMPUS, CHAMPVA, Title V, and other government programs.

Up to two payers can be coded for a surgical visit or hospital stay in HCUP data. When this occurs, the following hierarchy is used:

- If either payer is listed as Medicaid—payer is "Medicaid."
- For non-Medicaid stays, if either payer is listed as Medicare—payer is "Medicare."
- For stays that are neither Medicaid nor Medicare, if either payer is listed as private insurance—payer is "private insurance."
- For stays that are not Medicaid, Medicare, or private insurance, if either payer is some other third-party payer—payer is "other."
- For stays that have no third-party payer and the payer is listed as "self-pay" or "no charge"—payer is "uninsured."
- If no insurance information is available—payer is missing.

Charges

Charges in HCUP data are the amount the hospital charged or billed for the entire surgical visit or hospital stay and do not reflect charges for individual surgical procedures. Charges do not necessarily reflect reimbursements or costs and do not include most professional (physician) fees. Cost-to-charge ratios are available to convert inpatient hospital charges to inpatient hospital costs, but an equivalent ratio for outpatient hospital data is currently not available.

Specific Surgical Procedures

Part II of this report provides detailed statistics for specific surgeries and populations. These surgeries have been identified using the following ranges of ICD-9-CM procedure codes or CCS categories:

SURGERIES	ICD-9-CM CODES	CCS PROCEDURE CATEGORY
Appendectomy	Procedure codes: 47.01-47.19	80
Cholecystectomy and common duct exploration	Procedure codes: 51.21-51.24 or 51.41-51.59	84
Hernia repair	Procedure codes: 53.00-53.39	85
Bariatric surgery	Procedure codes: 43.81-43.89, 44.31, 44.39, 44.50-44.59, 44.69,45.90, or 45.91 *and* Diagnosis codes: 278.00-278.01 *Excludes* records with at least one cancer diagnosis in the following range: 150.0-159.9	——
Tonsillectomy and/or adenoidectomy	Procedure codes: 28.2-28.3 or 28.6-28.7	30
Mastectomy	Procedure codes: 85.41-85.48	167
Hysterectomy	Procedure codes: 68.3-68.9	124
Transurethral prostatectomy (TURP)	Procedure codes: 60.21-60.29 or 60.96-60.97	113

References

[1]National Center for Health Statistics. *Health, United States, 2004 with chartbook on trends in the health of Americans.* Hyattsville, MD: 2004.

[2]Kozak LJ, McCarthy E, Pokras R. Changing patterns of surgical care in the United States, 1980–1995. *Health Care Finance Rev.* 1999 Fall;21(1):31–49.

[3]U.S. Census Bureau, Population Division. Annual estimates of the population for the United States and States, and for Puerto Rico: April 1, 2000 to July 1, 2005. **http://www.census.gov/popest/states/NST-ann-est.html.** (Accessed May 9, 2006).

[4]DeNavas-Walt C, Proctor BD, Mills RJ. *Income, poverty, and health insurance coverage in the United States: 2003.* Current Population Reports, P60-226. Washington, DC: U.S. Census Bureau, 2004. **http://www.census.gov/prod/2004pubs/p60-226.pdf.** (Accessed May 9, 2006).

[5]American Hospital Association. Fast facts on US hospitals. Updated November 14, 2005. **http://www.aha.org/aha/resource-center/Statistics-and-Studies/fast-facts.html.** (Accessed October 17, 2006).

[6]U.S. Census Bureau, Population Division. Annual estimates of the population by sex, race, and Hispanic or Latino origin for States: April 1, 2000 to July 1, 2004. **http://www.census.gov/popest/states/asrh/SC-est2004-03.html.** (Accessed May 9, 2006).

[7]U.S. Census Bureau, Population Division. Estimates of the resident population by selected age groups for the United States and States and for Puerto Rico: July 1, 2004. **http://www.census.gov/popest/states/asrh/SC-est2004-01.html.** (Accessed May 9, 2006).

[8]American College of Surgeons. When you need an operation: about appendectomy. **http://www.facs.org/public_info/operation/app.pdf#search=%22American%20College%20of%20Surgeons%20About%20Appendectomy%22.** (Accessed August 10, 2006).

[9]Reddick RJ, Olsen DO. Outpatient laparoscopic laser cholecystectomy. *Am J Surg.* 1990 Nov;160(5):485–7.

[10]Encinosa WE, Bernard DM, Steiner CA, Chen CC. Use and costs of bariatric surgery and prescription weight-loss medications. *Health Aff (Millwood)*. 2005 Jul-Aug;24(4):1039–46.

[11]Brigger MT, Brietzke SE. Outpatient tonsillectomy in children: a systematic review. *Otolaryngol Head Neck Surg.* 2006 Jul;135(1):1–7.

[12]Lalakea ML, Marquez-Biggs I, Messner AH. Safety of pediatric short-stay tonsillectomy. *Arch Otolaryngol Head Neck Surg.* 1999 Jul;125 (7):749–52.

[13]Kaiser Family Foundation. State mandated benefits: coverage of inpatient mastectomy stay, 2004. **http://www.statehealthfacts.kff.org/cgi-bin/healthfacts.cgi?action=compare&category=Women%27s+Health&subcategory=Mandated+Benefits+in+Private+Insurance&topic=Minimum+IP+Mastectomy+Stay.** (Accessed April 21, 2006).

[14]Dooley WC. Ambulatory breast cancer surgery. *Ann Surg Oncol.* 2000 Apr;7(3):174–5.

For More Information

More information regarding HCUP data is available at **http://www.ahrq.gov/data/hcup**, as well as on the HCUP User Support Web site at **http://www.hcup-us.ahrq.gov**.

SASD data are available for purchase for the following data years and numbers of States:

1997 data: 6 States (Colorado, Florida, Maryland, New Jersey, New York, and Utah)
1998 data: 7 States (added Wisconsin)
1999 data: 8 States (added Maine)
2000 data: 10 States (added Kentucky and North Carolina)
2001 data: 11 States (added Nebraska)
2002 data: 11 States (no new additions)
2003 data: 10 States (dropped New York)
2004 data: 9 States (dropped Maine)

SID data are available for purchase for the following data years and numbers of States:

1990 data: 10 States (Arizona, Colorado, Florida, Iowa, Maryland, Massachusetts, New Jersey, New York, Washington, and Wisconsin)
1991 data: 10 States (no new additions)
1992 data: 10 States (no new additions)
1993 data: 11 States (added Oregon)
1994 data: 11 States (no new additions)
1995 data: 13 States (added California and South Carolina)
1996 data: 13 States (no new additions)
1997 data: 14 States (added Utah)
1998 data: 14 States (no new additions)
1999 data: 16 States (added Maine and Michigan)
2000 data: 19 States (added Kentucky, North Carolina, and West Virginia)
2001 data: 20 States (added Nebraska)
2002 data: 21 States (added Nevada)
2003 data: 21 States (no new additions)
2004 data: 18 States (dropped Maine, New York, and Utah)

SASD and SID data can be purchased for research through the HCUP Central Distributor sponsored by AHRQ: Social and Scientific Systems, Inc., telephone: 866-556-4287 (toll-free), fax: 301-628-3201, or e-mail: **hcup@s-3.com**. The HCUP Central Distributor can provide information on which States are included in both databases for any year.

Price of the data ranges from $20 to $3,170, depending on the data file, State, and requesting organization. Prices may be higher for customers outside the United States, Canada, and Mexico.

AHRQ is always looking for ways in which AHRQ-funded research, products, and tools have changed peoples' lives, influenced clinical practice, improved policies, and affected patient outcomes. Impact case studies describe AHRQ research findings in action. These case studies have been used in testimony, budget documents, and speeches. If you are aware of any impact your research has had on health care policy, clinical practice, or patient outcomes, please let us know by using the contact information below.

Healthcare Cost and Utilization Project (HCUP)
Center for Delivery, Organization, and Markets
Agency for Healthcare Research and Quality
Phone: 866-290-HCUP (4287)
E-mail: **hcup@ahrq.gov**

Appendix: 2003 Statistics on Major Diagnostic and Therapeutic Ambulatory Surgeries in U.S. Hospitals, All-Listed

Number of Ambulatory Surgeries, Percent Ambulatory, and Mean Charges per Visit

CLINICAL CLASSIFICATIONS SOFTWARE (CCS) PROCEDURE CATEGORY AND NUMBER		TOTAL NUMBER OF AMBULATORY SURGERIES (in thousands)	PERCENT AMBULATORY	MEAN CHARGE PER VISIT
Operations on the nervous system				
2	Insertion, replacement, or removal of extracranial ventricular shunt	1	4.9	$9,300
3	Laminectomy, excision intervertebral disc	48	24.3	$10,700
5	Insertion of catheter or spinal stimulator and injection into spinal canal	8	80.3	$16,100
6	Decompression of the peripheral nerve	122	96.5	$3,600
7	Other diagnostic nervous system procedures[a]	2	24.1	$3,800
9	Other O.R. therapeutic nervous system procedures[b]	37	41.6	$8,100
Operations on the endocrine system				
10	Thyroidectomy, partial or complete	12	38.7	$8,200
12	Other therapeutic endocrine procedures[c]	6	30.5	$7,200
Operations on the eye				
13	Corneal transplant	6	96.7	$9,900
14	Glaucoma procedures	19	98.6	$4,200
15	Lens and cataract procedures	431	99.6	$3,900
16	Repair of retinal tear, detachment	20	94.2	$8,300
17	Destruction of lesion of retina and choroids	3	90.7	$5,600
18	Diagnostic procedures on eye	4	91.5	$2,400
19	Other therapeutic procedures on eyelids, conjunctive (covering of eyeball), cornea[d]	70	94.6	$3,700

CLINICAL CLASSIFICATIONS SOFTWARE (CCS) PROCEDURE CATEGORY AND NUMBER		TOTAL NUMBER OF AMBULATORY SURGERIES (in thousands)	PERCENT AMBULATORY	MEAN CHARGE PER VISIT
20	Other therapeutic procedures on inside of eye[e]	58	94.8	$6,600
21	Other therapeutic procedures on eye muscles[f]	22	90.2	$4,500
Operations on the ear				
22	Tympanoplasty	23	97.1	$5,900
23	Myringotomy	149	97.7	$2,800
24	Mastoidectomy	6	83.7	$9,400
25	Diagnostic procedures on ear	1	89.3	$3,500
26	Other therapeutic ear procedures[g]	21	89.2	$6,400
Operations on the nose, mouth, and pharynx				
27	Control of epistaxis	1	69.3	$1,400
28	Plastic procedures on nose	73	93.2	$6,000
29	Dental procedures	5	80.6	$4,800
30	Tonsillectomy and/or adenoidectomy	186	94.9	$3,800
31	Diagnostic procedures on nose, mouth, and pharynx	2	71.5	$4,500
33	Other O.R. therapeutic procedures on nose, mouth, and pharynx[h]	127	81.9	$5,700
Operations on the respiratory system				
37	Diagnostic bronchoscopy and biopsy of bronchus	20	53.5	$3,300
40	Other diagnostic procedures of respiratory tract and mediastinum[i]	5	26.1	$6,800
42	Other O.R. therapeutic procedures on respiratory system[j]	17	36.2	$4,700
Operations on the cardiovascular system				
45	Percutaneous coronary angioplasty (PTCA)	20	7.5	$23,300
48	Insertion, revision, replacement, or removal of cardiac pacemaker or cardioverter/defibrillator	18	28.6	$20,200
49	Other O.R. heart procedures[k]	11	15.9	$20,100
52	Endovascular repair of aneurysm	1	4.7	$13,200
53	Varicose vein stripping, lower limb	20	96.0	$6,300
57	Creation, revision, and removal of arteriovenous fistula or vessel-to-vessel cannula for dialysis	34	61.6	$7,200
59	Other O.R. procedures on vessels of head and neck[l]	1	8.6	$9,300

Appendix

CLINICAL CLASSIFICATIONS SOFTWARE (CCS) PROCEDURE CATEGORY AND NUMBER		TOTAL NUMBER OF AMBULATORY SURGERIES (in thousands)	PERCENT AMBULATORY	MEAN CHARGE PER VISIT
61	Other O.R. procedures on vessels other than the head and neck[m]	58	32.7	$10,700
62	Other diagnostic cardiovascular procedures[n]	5	56.1	$3,100
Operations on the hemic and lymphatic system				
67	Other therapeutic procedures, hemic and lymphatic system[o]	66	44.6	$6,400
Operations on the digestive system				
80	Appendectomy	22	15.8	$9,500
81	Hemorrhoid procedures	32	86.6	$4,200
83	Biopsy of liver	1	9.9	$8,800
84	Cholecystectomy and common duct exploration	152	51.5	$8,100
85	Inguinal and femoral hernia repair	153	89.1	$5,800
86	Other hernia repair[p]	84	55.9	$6,200
87	Laparoscopy	44	58.9	$6,700
89	Exploratory laparotomy	1	4.3	$8,000
90	Excision, lysis peritoneal adhesions	35	22.3	$8,100
92	Other bowel diagnostic procedures[q]	1	16.0	$4,200
94	Other O.R. upper GI therapeutic procedures[r]	7	9.4	$10,900
96	Other O.R. lower GI therapeutic procedures[s]	45	35.2	$3,900
97	Other gastrointestinal diagnostic procedures[t]	2	20.3	$6,300
99	Other O.R. gastrointestinal therapeutic procedures[u]	27	25.9	$6,400
Operations on the urinary system				
100	Endoscopy and endoscopic biopsy of the urinary tract	15	76.6	$4,800
101	Transurethral excision, drainage, or removal of a urinary obstruction	77	69.9	$6,300
103	Nephrotomy and nephrostomy	3	17.2	$8,000
106	Genitourinary incontinence procedures	18	32.9	$8,400
109	Procedures on the urethra	19	79.3	$5,000
110	Other diagnostic procedures of urinary tract[v]	1	44.9	$2,300
112	Other O.R. therapeutic procedures of urinary tract[w]	9	21.6	$6,100

CLINICAL CLASSIFICATIONS SOFTWARE (CCS) PROCEDURE CATEGORY AND NUMBER		TOTAL NUMBER OF AMBULATORY SURGERIES (in thousands)	PERCENT AMBULATORY	MEAN CHARGE PER VISIT
Operations on the male genital organs				
113	Transurethral prostatectomy (TURP)	8	20.4	$7,000
114	Open prostatectomy	1	4.1	$16,500
115	Circumcision	30	6.1	$3,500
116	Diagnostic procedures, male genital	2	87.2	$4,700
118	Other O.R. therapeutic procedures, male genital[x]	64	86.0	$5,500
Operations on the female genital organs				
119	Oophorectomy, unilateral and bilateral	26	14.7	$9,500
120	Other operations on ovary[y]	41	59.5	$7,400
121	Ligation of fallopian tubes	66	40.8	$5,500
122	Removal ectopic pregnancy	4	36.2	$9,100
123	Other operations on fallopian tubes[z]	10	43.9	$7,900
124	Hysterectomy, abdominal and vaginal	18	8.6	$9,700
125	Other excision of cervix and uterus[aa]	128	86.8	$5,200
126	Abortion (termination of pregnancy)	18	95.2	$3,700
127	Dilatation and curettage (D&C), aspiration after delivery or abortion	71	82.0	$3,900
128	Diagnostic dilatation and curettage (D&C)	142	93.2	$5,000
129	Repair of cystocele and rectocele, obliteration of vaginal vault	7	14.5	$8,700
130	Other diagnostic procedures female organs[bb]	30	81.8	$3,700
132	Other O.R. therapeutic procedures, female organs[cc]	54	54.0	$5,100
Obstetrical procedures				
141	Other therapeutic obstetrical procedures[dd]	6	59.9	$3,700
Operations on the musculoskeletal system				
142	Partial excision bone	93	54.5	$7,000
143	Bunionectomy or repair of toe deformities	66	97.1	$5,500
144	Treatment, facial fracture or dislocation	6	41.2	$7,900
145	Treatment, fracture or dislocation of radius and ulna	31	62.2	$6,700

Appendix

CLINICAL CLASSIFICATIONS SOFTWARE (CCS) PROCEDURE CATEGORY AND NUMBER		TOTAL NUMBER OF AMBULATORY SURGERIES (in thousands)	PERCENT AMBULATORY	MEAN CHARGE PER VISIT
146	Treatment, fracture or dislocation of hip and femur	7	7.7	$6,000
147	Treatment, fracture or dislocation of lower extremity (other than hip or femur)	52	43.2	$6,300
148	Other fracture and dislocation procedure[ee]	54	58.8	$5,700
149	Arthroscopy	97	93.1	$7,000
150	Division of joint capsule, ligament, or cartilage	25	81.9	$6,600
151	Excision of semilunar cartilage of knee	159	97.5	$6,200
152	Arthroplasty knee	78	35.4	$8,700
154	Arthroplasty other than hip or knee	89	82.4	$8,300
157	Amputation of lower extremity	6	11.7	$4,200
158	Spinal fusion	12	10.4	$18,600
159	Other diagnostic procedures on musculoskeletal system[ff]	15	47.4	$4,300
160	Other therapeutic procedures on muscles and tendons[gg]	246	77.5	$5,400
161	Other O.R. therapeutic procedures on bone[hh]	40	45.3	$8,100
162	Other O.R. therapeutic procedures on joints[ii]	166	81.6	$6,600
164	Other O.R. therapeutic procedures on musculoskeletal system[jj]	13	44.0	$6,300
Operations on the integumentary system				
165	Breast biopsy and other diagnostic procedures on breast	13	88.1	$4,500
166	Lumpectomy, quadrantectomy of breast	151	94.7	$4,900
167	Mastectomy	7	22.4	$8,900
169	Debridement of wound, infection, or burn	77	46.7	$1,600
170	Excision of skin lesion	18	83.1	$4,600
172	Skin graft	38	55.8	$4,800
175	Other O.R. therapeutic procedures on skin and breast[kk]	105	74.6	$6,700
Miscellaneous diagnostic and therapeutic procedures				
184	Intraoperative cholangiogram	38	49.7	$8,400
220	Ophthalmologic and otologic diagnosis and treatment	3	92.0	$4,400

Note: Statistics are based on surgery-related procedures only. Additionally, CCS procedure categories present in fewer than 500 ambulatory surgeries are excluded.

a Primarily includes surgeries such as a biopsy on a peripheral nerve or other diagnostic procedures on the spinal cord.

b Primarily includes surgeries such as removal of a peripheral nerve.

c Primarily includes surgeries such as removal of part or all of a duct or parathyroid gland.

d Primarily includes surgeries such as repair of a cut to the eyelid or other therapeutic procedure on the surface of the eyeball or cornea.

e Primarily includes surgeries such as removal of abnormal tissue on the glassy part of the eye.

f Primarily includes surgeries such as an operation on two or more muscles that have detached from the eye.

g Primarily includes surgeries such as removal of damaged tissue on the external part of the ear or removal of a tympanic membrane tube.

h Primarily includes surgeries such as ethmoidectomy, turbinectomy, and the excision of sinus lesions.

i Primarily includes surgeries such as a puncturing the chest wall for immediate drainage of fluid.

j Primarily includes surgeries such as the removal of a lesion or tissue of the larynx.

k Primarily includes surgeries such as removal of heart tissue or repair of atrial septum.

l Primarily includes surgeries such as a cut in or removal of a vessel of the head or neck.

m Primarily includes surgeries such as angioplasty of non-coronary vessels.

n Primarily includes surgeries such as the measurement of the heart's electrical activity, biopsy of the heart, or a biopsy of a blood vessel.

o Primarily includes surgeries such as a biopsy of a lymphatic structure.

p Primarily includes surgeries such as umbilical and abdominal hernia repair.

q Primarily includes surgeries such as endoscopy of large intestine through a particular opening.

r Primarily includes surgeries such as repair of the esophagus function or repair of the stomach, not otherwise specified.

s Primarily includes surgeries such as an incision or removal of an anal fistula.

t Primarily includes surgeries such as a biopsy of the pancreas.

u Primarily includes surgeries such as removal of peritoneal tissue or removal of part of the abdominal wall.

v Primarily includes surgeries such as a kidney biopsy.

w Primarily includes surgeries such as the division of a bladder muscle or an incision in the bladder.

x Primarily includes surgeries such as cutting or fixation of parts of the male genitalia.

y Primarily includes surgeries such as a laproscopic removal of an ovary.

z Primarily includes surgeries such as removal of fallopian tubes or blowing of air into the fallopian tubes.

aa Primarily includes surgeries such as the destruction of uterine lesions and endometrial ablation.

bb Primarily includes surgeries such as a biopsy of the uterus or hysteroscopy of the uterus.

cc Primarily includes surgeries such as cutting of the female genitalia.

dd Primarily includes surgeries such as a repair of the cervix.

ee Primarily includes surgeries such as closed reduction of dislocation or open reduction of fracture.

ff Primarily includes surgeries such as bone or soft tissue biopsy.

gg Primarily includes surgeries such as rotator cuff repair, exploratory surgery on the hand, and the excision of tendon and soft tissue lesions.

hh Primarily includes surgeries such as repair or plastic operations on bone or complete removal of a bone (excluding amputation).

ii Primarily includes surgeries such as the destruction of knee and shoulder lesions and the removal of inflamed joint tissue from the knee.

jj Primarily includes surgeries such as an injection into a joint.

kk Primarily includes surgeries such as breast reductions, skin removal, breast implants, and the excision of cysts and abscesses.

tbookfactbookfactbookfact

AHRQ Publication No. 07-0007
January 2007
ISBN 1-58763-288-4

U.S. Department of Health and Human Services
Agency for Healthcare Research and Quality
540 Gaither Road
Rockville, MD 20850
www.ahrq.gov