

STATISTICAL BRIEF #188

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Surgeries in Hospital-Owned Outpatient Facilities, 2012

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Introduction

From 1992 to 2012, the total number of surgeries at community hospitals in the United States increased by 17 percent to about 26.8 million surgeries. Outpatient surgeries represented a growing share (65 percent; 17.3 million) of all surgeries at community hospitals in the United States in 2012, up from 54 percent (12.3 million) in 1992.¹

Ambulatory surgery (AS), or outpatient surgery, is a planned operation for which the patient is not expected to be admitted to the hospital. Comparison of ambulatory surgery with inpatient surgery is essential for understanding utilization patterns for specific surgical procedures.

This Healthcare Cost and Utilization Project (HCUP) Statistical Brief compares surgeries performed at hospital-owned facilities in the ambulatory (outpatient) versus inpatient setting in 28 States that provide data for both types of settings. These 28 States represent about two-thirds of the U.S. population. Procedures performed in freestanding (nonhospital-owned) AS centers were not included because many State AS data sources do not include these types of centers.

The analysis was limited to visits for adults aged 18 years and older who had an invasive surgery commonly performed for therapeutic purposes (i.e., to treat disease or injury); excluded were noninvasive surgeries and surgeries typically used for diagnostic or exploratory purposes (e.g., colonoscopy). The HCUP Surgery Flag software² was used to identify invasive, therapeutic surgeries based on a narrow, targeted, and restrictive definition that includes surgical procedures that involve incision, excision, manipulation, or suturing of tissue that penetrates or breaks the skin; typically require use of an

¹ American Hospital Association. Utilization and volume. In: Trends Affecting Hospitals and Health Systems, chapter 3. <http://www.aha.org/research/reports/tw/chartbook/index.shtml>. Accessed August 13, 2014.

² Agency for Healthcare Research and Quality. HCUP Surgery Flag Software. Healthcare Cost and Utilization Project (HCUP). Rockville, MD: Agency for Healthcare Research and Quality. Updated May 2013. <http://www.hcup-us.ahrq.gov/toolssoftware/surgflags/surgeryflags.jsp>. Accessed August 13, 2014.

Highlights

- In 2012 across 28 states, 14.4 million hospital visits involved invasive, therapeutic surgeries. Just over half of these visits (53.1 percent) were performed in a hospital-owned ambulatory surgery (AS) setting, and the remaining (46.9 percent) were inpatient.
- Nearly all hospital-based surgical procedures related to the eye (98.8 percent) and ear (91.8 percent) were outpatient. In contrast, obstetrical procedures were nearly all inpatient (97.7 percent).
- The following procedures were among the most common ambulatory surgeries:
 - Lens and cataract procedures (99.9 percent performed in ambulatory settings [AS])
 - Cholecystectomy/common duct exploration (55.1 percent AS)
 - Excision of semilunar cartilage of knee (98.5 percent AS)
 - Hernia repair (90.2 percent AS)
 - Lumpectomy (96.5 percent AS)
 - Decompression peripheral nerve (95.2 percent AS)
 - Transurethral excision; drainage; or removal urinary obstruction (71.9 percent AS)
 - Pacemaker/cardioverter (64.0 percent AS)
 - Skin graft (67.0 percent AS)
 - Hysterectomy (39.8 percent AS)
 - Laminectomy/excision intervertebral disc (26.1 percent AS)

operating room; and also require regional anesthesia, general anesthesia, or sedation to control pain.

This report presents the distribution of outpatient surgery compared with inpatient surgical procedures by body system, as well as the most common surgical procedures performed in an outpatient setting. In addition, ambulatory and inpatient volume and procedure rates are compared for each procedure. Unless otherwise noted, volumes and rates are based on all-listed procedure codes.

Findings

Characteristics of surgeries performed in hospital-owned ambulatory versus inpatient settings, 2012

Table 1 presents characteristics of community hospital visits for invasive, therapeutic surgeries performed in the AS (outpatient) setting versus the hospital inpatient setting (admitted to the hospital) in 28 States in 2012.

Table 1. Characteristics of hospital visits or stays for surgery performed in ambulatory and inpatient settings in 28 States, 2012

Characteristics	Ambulatory setting	Inpatient setting
Total visits or stays for surgeries, n	7,655,600	6,762,300
Percentage of all surgical visits or stays	53.1	46.9
Visits or stays per 100,000 population ^a	4,186	3,697
Total number of surgeries, n	9,322,200	9,730,300
Percentage of all surgical procedures	48.9	51.1
Average number of surgeries per visit or stay	1.2	1.4
Average length of stay, days	0.1	5.4
Visits or stays by type of community hospital ^b (%)		
Large hospitals	59.3	66.9
Metropolitan hospitals	86.8	92.4
Teaching hospitals	48.8	55.7
Non-Federal government hospitals	11.9	11.7
Private not-for-profit hospitals	74.3	73.3
Private for-profit hospitals	13.8	15.0

^a Based on State population estimates from the U.S. Census Bureau.

^b Hospital characteristics related to bed size, location, and teaching status are not mutually exclusive.

Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), State Ambulatory Surgery and Services Databases (SASD) and State Inpatient Databases (SID), 2012, from 28 States

- **Based on data from 28 States in 2012, 14.4 million hospital visits were for invasive, therapeutic surgery; more than half of these visits occurred in the AS setting.**

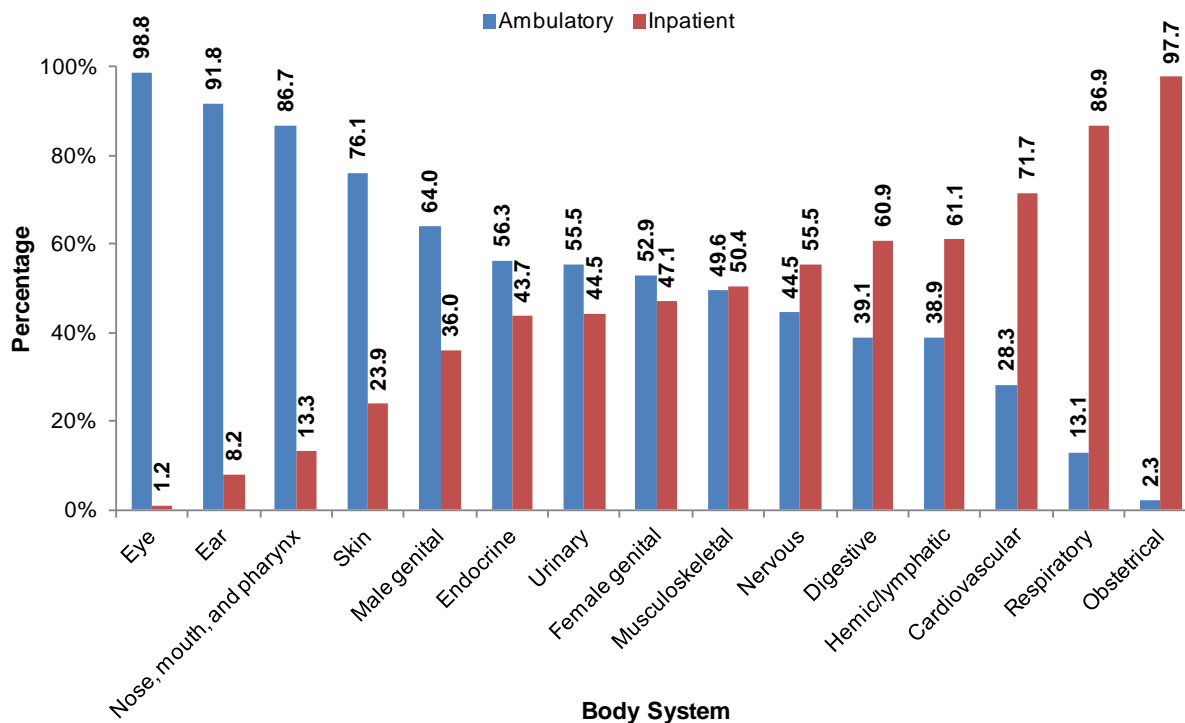
A total of 14.4 million hospital visits during which at least one surgery was performed in 2012 across the 28 States were examined for this report. Just over half of these visits (53.1 percent) occurred in a hospital-owned AS setting, and the remaining visits (46.9 percent) occurred in the hospital inpatient setting. These visits included more than 19 million total surgeries, nearly half of which (48.9 percent) were performed in an outpatient setting. The average number of surgeries performed per visit was slightly higher in the inpatient than the outpatient setting (1.4 vs. 1.2).

- **The majority of AS and inpatient surgeries were performed at large, metropolitan, private not-for-profit hospitals.**

Most ambulatory surgical visits and most hospital inpatient surgical stays occurred in large, metropolitan, private not-for-profit hospitals. However, compared with inpatient surgeries, outpatient surgeries were more likely to be performed in smaller hospitals, outside metropolitan areas, and in nonteaching settings.

Comparison of surgeries by body system in hospital-owned ambulatory versus inpatient settings, 2012
 Figure 1 shows the distribution of invasive, therapeutic surgeries by body system that were performed in AS and hospital inpatient settings in 2012.

Figure 1. Ambulatory versus inpatient surgeries by body system, 2012



Note: Body systems are based on Clinical Classifications Software (CCS) and Clinical Classifications Software for Services and Procedures.

Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), State Ambulatory Surgery and Services Databases (SASD) and State Inpatient Databases (SID), 2012, from 28 States

- **The majority of surgeries on the eye, ear, nose/mouth/pharynx, and skin were performed in an outpatient setting.**

Nearly all invasive, therapeutic surgeries performed on the eye occurred in the AS setting (98.8 percent). The outpatient setting also was most common for the majority of surgeries performed on the ear (91.8 percent), nose/mouth/pharynx (86.7 percent), and skin (76.1 percent).

- **The majority of obstetrical, respiratory, and cardiovascular surgeries were performed in the inpatient setting.**

Compared with the inpatient setting, very few obstetrical surgeries were performed in the AS setting (2.3 vs. 97.7 percent). Similarly, respiratory (13.1 percent) and cardiovascular (28.3 percent) surgeries were less frequently performed in an ambulatory setting.

The most common ambulatory surgeries performed, 2012

Table 2 lists the 25 most common, invasive, therapeutic clinically grouped surgeries that were performed in the AS setting in 2012, along with the percentage of these types of surgeries that were performed in the outpatient versus inpatient setting. Surgeries are ranked from most to least common in the AS setting.

A comprehensive list of the distribution between the outpatient and inpatient settings for all specific, invasive, therapeutic surgeries is presented in the appendix.

Table 2. The 25 most common ambulatory surgeries performed in community hospitals, 2012

All-listed CCS procedures	All ambulatory surgeries, %	Number of surgeries, thousands		Number of surgeries per 100,000 population ^a		Surgeries performed in an ambulatory setting, %
		Ambulatory setting	Inpatient setting	Ambulatory setting	Inpatient setting	
Lens and cataract procedures	9.3	865	1	473	0	99.9
Other therapeutic procedures on muscles and tendons	5.8	543	207	297	113	72.4
Other OR therapeutic procedures on joints	4.5	420	107	229	58	79.7
Cholecystectomy and common duct exploration	4.0	376	307	206	168	55.1
Excision of semilunar cartilage of knee	3.6	336	5	184	3	98.5
Inguinal and femoral hernia repair	2.8	260	28	142	15	90.2
Other OR therapeutic procedures on skin and breast	2.5	231	73	126	40	75.9
Lumpectomy; quadrantectomy of breast	2.4	225	8	123	4	96.5
Decompression peripheral nerve	2.4	224	11	123	6	95.2
Other hernia repair	2.3	218	180	119	98	54.8
Other OR therapeutic procedures on nose; mouth and pharynx	2.2	205	47	112	26	81.2
Other OR procedures on vessels other than head and neck	2.2	202	323	110	176	38.5
Other excision of cervix and uterus	2.2	201	33	110	18	85.9
Partial excision bone	2.0	190	245	104	134	43.7
Other OR therapeutic procedures on bone	1.9	180	96	98	52	65.3
Transurethral excision; drainage; or removal urinary obstruction	1.9	173	68	95	37	71.9
Excision of skin lesion	1.7	160	7	88	4	96.1
Other OR therapeutic procedures; female organs	1.7	160	73	87	40	68.6
Insertion; revision; replacement; removal of cardiac pacemaker or cardioverter/defibrillator	1.7	160	90	87	49	64.0
Skin graft	1.7	160	78	87	43	67.0
Hysterectomy; abdominal and vaginal	1.7	156	236	85	129	39.8
Other intraocular therapeutic procedures	1.7	155	3	85	2	98.1
Debridement of wound; infection or burn	1.7	154	116	84	63	57.1
Bunionectomy or repair of toe deformities	1.4	134	3	74	1	98.1
Laminectomy; excision intervertebral disc	1.3	122	345	67	189	26.1

Abbreviation: OR, operating room.

^a Based on State population estimates from the U.S. Census Bureau.

Note: Clinical Classifications Software (CCS) and Clinical Classifications Software for Services and Procedures.

Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), State Ambulatory Surgery and Services Databases (SASD) and State Inpatient Databases (SID), 2012, from 28 States

- **Lens and cataract procedures were the most common invasive, therapeutic type of surgery performed in an outpatient setting.**

Lens and cataract procedures were the most common type of surgery performed in the AS setting, accounting for 9.3 percent of all AS surgeries performed. Nearly all lens and cataract procedures (99.9 percent) were performed in an outpatient setting. Most other intraocular therapeutic procedures (mostly retinal procedures) also were performed in the outpatient setting (98.1 percent).

- **Other therapeutic procedures on muscles/tendons and joints were the second and third most common types of outpatient surgery.**

Other therapeutic procedures on muscles or tendons (mostly rotator cuff repair surgeries and tendon sheath repair procedures) were the second most common type of surgery performed in the AS setting, accounting for 5.8 percent of all outpatient surgeries. Other therapeutic procedures on joints (mostly knee and shoulder arthroscopies) were ranked third, accounting for 4.5 percent of all outpatient surgeries. The majority of both types of procedures were performed in the outpatient setting (72.4 and 79.7 percent, respectively). Four other musculoskeletal system procedures were also commonly performed in the outpatient setting: excision of semilunar cartilage of knee (3.6 percent), partial excision bone (2.0 percent), other operating room (OR) therapeutic procedures on bone (primarily removal of metal implant; 1.9 percent), and bunionectomy or repair of toe deformities (1.4 percent).

- **Operations on the digestive system accounted for 3 of the 25 most common ambulatory surgery procedures and constituted 9.1 percent of all outpatient ambulatory surgeries**

Operations on the digestive system accounted for 3 of the 25 most common types of AS surgery and constituted 9.1 percent of all outpatient ambulatory surgeries: cholecystectomy and common duct exploration (4.0 percent), inguinal and femoral hernia repair (2.8 percent), and other hernia repair (2.3 percent). Approximately 55 percent of all cholecystectomy and other hernia repair surgeries and over 90 percent of inguinal and femoral hernia repair surgeries were performed in the outpatient setting.

- **Five of the 25 most common outpatient surgeries were procedures that are primarily or exclusively performed on women.**

Five of the 25 most common outpatient surgeries were procedures that are primarily or exclusively performed on women: other OR therapeutic procedures on skin and breast (primarily breast reduction or augmentation; 2.5 percent); lumpectomy, quadrantectomy of breast (2.4 percent); other excision of cervix and uterus (predominantly uterine ablation; 2.2 percent); other OR therapeutic procedures, female organs (predominantly laparoscopic removal of lesions; 1.7 percent); and hysterectomy, abdominal and vaginal (1.7 percent). The majority of these types of surgeries were performed in the outpatient setting except for hysterectomy, which was most commonly performed in the inpatient setting (60.2 percent).

Appendix. Invasive, therapeutic surgeries, listed by body system, performed in community hospitals by setting (ambulatory versus inpatient), 2012

All-listed procedures (CCS number and description)	Number of surgeries, thousands		Number of surgeries per 100,000 population		Surgeries performed in an ambulatory setting, %
	Ambulatory setting	Inpatient setting	Ambulatory setting	Inpatient setting	
Operations on the nervous system					
3: Laminectomy; excision intervertebral disc ^a	122.2	345.5	66.8	188.9	26.1
5: Insertion of catheter or spinal stimulator and injection into spinal canal	30.6	5.2	16.8	2.9	85.4
6: Decompression peripheral nerve ^a	224.2	11.2	122.6	6.1	95.2
9: Other OR therapeutic nervous system procedures	90.2	126.7	49.3	69.3	41.6
Operations on the endocrine system					
10: Thyroidectomy; partial or complete	55.0	33.7	30.1	18.4	62.0
12: Other therapeutic endocrine procedures	27.2	30.1	14.9	16.4	47.5
Operations on the eye					
13: Corneal transplant	14.4	0.2	7.9	0.1	98.4
14: Glaucoma procedures	50.4	0.3	27.5	0.2	99.4
15: Lens and cataract procedures ^a	864.9	0.7	472.8	0.4	99.9
16: Repair of retinal tear; detachment	37.9	0.7	20.7	0.4	98.2
19: Other therapeutic procedures on eyelids; conjunctiva; cornea	106.8	5.7	58.4	3.1	95.0
20: Other intraocular therapeutic procedures ^a	155.2	3.0	84.9	1.7	98.1
21: Other extraocular muscle and orbit therapeutic procedures	19.5	3.9	10.7	2.1	83.5
Operations on the ear					
22: Tympanoplasty	17.6	0.5	9.6	0.3	97.0
23: Myringotomy	19.7	1.6	10.8	0.9	92.6
24: Mastoidectomy	9.8	1.5	5.3	0.8	86.8
26: Other therapeutic ear procedures	26.3	2.9	14.4	1.6	89.9
Operations on the nose, mouth, and pharynx					
27: Control of epistaxis	17.6	1.2	9.6	0.7	93.6
28: Plastic procedures on nose	111.3	6.0	60.9	3.3	94.9
29: Dental procedures	6.7	2.2	3.6	1.2	75.0
30: Tonsillectomy and/or adenoidectomy	65.1	5.4	35.6	2.9	92.4
33: Other OR therapeutic procedures on nose; mouth and pharynx ^a	204.8	47.4	112.0	25.9	81.2
Operations on the respiratory system					
42: Other OR Rx procedures on respiratory system and mediastinum	32.0	65.3	17.5	35.7	32.9
Operations on the cardiovascular system					
45: Percutaneous transluminal coronary angioplasty (PTCA)	54.0	400.3	29.5	218.8	11.9
48: Insertion; revision; replacement; removal of cardiac pacemaker or cardioverter/defibrillator ^a	160.0	90.1	87.5	49.3	64.0
49: Other OR heart procedures	24.4	141.1	13.3	77.2	14.7
53: Varicose vein stripping; lower limb	24.8	0.5	13.5	0.3	98.0
55: Peripheral vascular bypass	3.0	49.3	1.7	26.9	5.8

All-listed procedures (CCS number and description)	Number of surgeries, thousands		Number of surgeries per 100,000 population		Surgeries performed in an ambulatory setting, %
	Ambulatory setting	Inpatient setting	Ambulatory setting	Inpatient setting	
57: Creation; revision and removal of arteriovenous fistula or vessel-to-vessel cannula for dialysis	95.0	35.9	51.9	19.6	72.6
59: Other OR procedures on vessels of head and neck	2.6	39.6	1.4	21.7	6.1
61: Other OR procedures on vessels other than head and neck ^a	202.0	322.7	110.5	176.4	38.5
Operations on the hemic and lymphatic system					
64: Bone marrow transplant	3.0	11.5	1.7	6.3	20.9
67: Other therapeutic procedures; hemic and lymphatic system	110.2	149.4	60.3	81.7	42.5
Operations on the digestive system					
78: Colorectal resection	5.2	224.2	2.8	122.6	2.3
80: Appendectomy	65.4	172.7	35.8	94.4	27.5
81: Hemorrhoid procedures	66.5	6.3	36.3	3.4	91.4
84: Cholecystectomy and common duct exploration ^a	376.0	307.0	205.6	167.8	55.1
85: Inguinal and femoral hernia repair ^a	260.3	28.2	142.3	15.4	90.2
86: Other hernia repair ^a	218.5	180.1	119.4	98.5	54.8
87: Laparoscopy (GI only)	15.0	0.0	8.2	0.0	99.9
90: Excision; lysis peritoneal adhesions	29.5	252.3	16.1	137.9	10.5
94: Other OR upper GI therapeutic procedures	20.6	119.5	11.3	65.4	14.7
96: Other OR lower GI therapeutic procedures	80.8	188.2	44.2	102.9	30.0
99: Other OR gastrointestinal therapeutic procedures	40.8	166.6	22.3	91.1	19.7
Operations on the urinary system					
100: Endoscopy and endoscopic biopsy of the urinary tract	9.0	0.0	4.9	0.0	100.0
101: Transurethral excision; drainage; or removal urinary obstruction ^a	172.9	67.6	94.5	37.0	71.9
103: Nephrotomy and nephrostomy	8.1	37.9	4.4	20.7	17.6
106: Genitourinary incontinence procedures	74.2	35.2	40.6	19.2	67.8
108: Indwelling catheter	25.9	8.7	14.2	4.8	74.8
109: Procedures on the urethra	32.7	7.4	17.9	4.0	81.6
112: Other OR therapeutic procedures of urinary tract	28.1	62.4	15.4	34.1	31.0
Operations on the male genital system					
113: Transurethral resection of prostate (TURP)	42.5	31.6	23.2	17.3	57.3
114: Open prostatectomy	5.3	50.7	2.9	27.7	9.5
115: Circumcision	18.1	1.1	9.9	0.6	94.1
118: Other OR therapeutic procedures; male genital	99.0	15.7	54.1	8.6	86.3
Operations on the female genital system					
119: Oophorectomy; unilateral and bilateral	98.0	169.4	53.6	92.6	36.7
120: Other operations on ovary	43.1	33.4	23.6	18.3	56.3
121: Ligation or occlusion of fallopian tubes	83.0	196.2	45.4	107.2	29.7

All-listed procedures (CCS number and description)	Number of surgeries, thousands		Number of surgeries per 100,000 population		Surgeries performed in an ambulatory setting, %
	Ambulatory setting	Inpatient setting	Ambulatory setting	Inpatient setting	
122: Removal of ectopic pregnancy	11.6	10.0	6.4	5.5	53.7
123: Other operations on fallopian tubes	29.1	26.2	15.9	14.3	52.6
124: Hysterectomy; abdominal and vaginal ^a	155.7	235.9	85.1	129.0	39.8
125: Other excision of cervix and uterus ^a	201.3	33.1	110.0	18.1	85.9
126: Abortion (termination of pregnancy)	10.0	1.0	5.5	0.6	90.5
127: Dilatation and curettage (D&C); aspiration after delivery or abortion	110.7	25.0	60.5	13.7	81.6
129: Repair of cystocele and rectocele; obliteration of vaginal vault	45.3	44.4	24.8	24.3	50.5
132: Other OR therapeutic procedures; female organs ^a	160.0	73.3	87.5	40.1	68.6
141: Other therapeutic obstetrical procedures	12.1	5.2	6.6	2.9	69.8
Operations on the musculoskeletal system					
142: Partial excision bone ^a	190.3	245.4	104.0	134.1	43.7
143: Bunionectomy or repair of toe deformities ^a	134.4	2.6	73.5	1.4	98.1
144: Treatment; facial fracture or dislocation	37.5	17.7	20.5	9.7	68.0
145: Treatment; fracture or dislocation of radius and ulna	73.9	37.4	40.4	20.4	66.4
146: Treatment; fracture or dislocation of hip and femur	3.4	195.0	1.9	106.6	1.7
147: Treatment; fracture or dislocation of lower extremity (other than hip or femur)	89.7	130.5	49.1	71.4	40.7
148: Other fracture and dislocation procedure	112.3	106.6	61.4	58.3	51.3
149: Arthroscopy	53.7	1.6	29.4	0.9	97.2
150: Division of joint capsule; ligament or cartilage	46.8	10.2	25.6	5.6	82.1
151: Excision of semilunar cartilage of knee ^a	336.5	5.2	183.9	2.8	98.5
152: Arthroplasty knee	46.4	513.6	25.4	280.8	8.3
153: Hip replacement; total and partial	7.9	345.9	4.3	189.1	2.2
154: Arthroplasty other than hip or knee	100.8	66.2	55.1	36.2	60.4
155: Arthrocentesis	20.6	0.1	11.3	0.0	99.7
157: Amputation of lower extremity	22.7	97.0	12.4	53.0	19.0
158: Spinal fusion	35.6	332.9	19.4	182.0	9.7
160: Other therapeutic procedures on muscles and tendons ^a	543.0	207.3	296.9	113.3	72.4
161: Other OR therapeutic procedures on bone ^a	179.7	95.6	98.3	52.2	65.3
162: Other OR therapeutic procedures on joints ^a	419.7	106.6	229.5	58.3	79.7
164: Other OR therapeutic procedures on musculoskeletal system	32.8	30.0	17.9	16.4	52.2
Operations on the integumentary system					
166: Lumpectomy; quadrantectomy of breast ^a	224.9	8.1	123.0	4.4	96.5
167: Mastectomy	32.9	45.6	18.0	24.9	41.9
168: Incision and drainage; skin and subcutaneous tissue	35.0	0.4	19.1	0.2	98.8
169: Debridement of wound; infection or burn ^a	154.5	115.8	84.5	63.3	57.1

All-listed procedures (CCS number and description)	Number of surgeries, thousands		Number of surgeries per 100,000 population		Surgeries performed in an ambulatory setting, %
	Ambulatory setting	Inpatient setting	Ambulatory setting	Inpatient setting	
170: Excision of skin lesion ^a	160.1	6.6	87.5	3.6	96.1
171: Suture of skin and subcutaneous tissue	32.1	0.8	17.6	0.5	97.5
172: Skin graft ^a	159.6	78.5	87.3	42.9	67.0
175: Other OR therapeutic procedures on skin and breast ^a	231.0	73.3	126.3	40.1	75.9
Miscellaneous diagnostic and therapeutic procedures					
211: Therapeutic radiology for cancer treatment	5.6	3.1	3.1	1.7	64.3
231: Other therapeutic procedures	48.5	125.9	26.5	68.8	27.8

Abbreviation: CCS, Clinical Classifications Software.

Notes: Statistics are based on the “narrow” definition of the HCUP Surgery Flag software. CCS procedure categories with fewer than 2,000 ambulatory surgery cases are excluded.

^a The top 25 surgical procedures also reported in Table 2 are highlighted.

Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), State Ambulatory Surgery and Services Databases (SASD) and State Inpatient Databases (SID), 2012, from 28 States

Data Source

The volumes and rates in this Statistical Brief are based upon data from the Healthcare Cost and Utilization Project (HCUP) 2012 State Ambulatory Surgery and Services Databases (SASD) and 2012 State Inpatient Databases (SID). This report evaluates both outpatient and inpatient surgery data from 28 States that contributed data to both the 2012 SASD and the 2012 SID: California, Colorado, Connecticut, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Michigan, Minnesota, Missouri, Nebraska, Nevada, New Jersey, New York, North Carolina, Ohio, Oklahoma, Oregon, South Carolina, South Dakota, Tennessee, Texas, Vermont, and Wisconsin. Supplemental sources included population denominator data for use with HCUP databases, derived from information available from the Bureau of the Census.³

Definitions

Procedures, ICD-9-CM, Current Procedural Terminology (CPT®), and Clinical Classifications Software (CCS)

All-listed procedures include all procedures performed during the hospital inpatient stay or outpatient visit, whether for definitive treatment or for diagnostic or exploratory purposes. Procedures are deduplicated: if a particular CCS procedure occurs multiple times during the same surgical visit or hospital stay, it is counted only once.

Procedures on inpatient hospitalization records are coded using the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM); procedures on ambulatory surgery and services records can be coded using either ICD-9-CM or the CPT.

ICD-9-CM and CPT both assign numeric codes to procedures; ICD-9-CM is limited to procedures in the inpatient setting. There are approximately 4,000 ICD-9-CM procedure codes and 9,600 CPT procedure codes.

CCS categorizes ICD-9-CM procedure codes into a manageable number of clinically meaningful, mutually exclusive categories.⁴ This clinical grouper makes it easier to quickly understand patterns of procedure use. When CPT was used on ambulatory surgery records, the CCS for Services and Procedures⁵ was used to classify procedures into groupings comparable to the CCS.

Case definition

For this report, records from the SASD meeting the following criteria were included:

- The discharge originated from a hospital-owned facility with at least 200 ambulatory surgery visits per year. The ambulatory surgery setting is designated as a short-term, community, nonrehabilitation hospital. Ambulatory surgeries from nonhospital-owned facilities were not included.
- Patients were aged 18 years and older.
- Length of stay was 0 or 1 day.
- The HCUP Surgery Flag software⁶ was used to identify procedures that are classified as a surgery based on a narrow definition (surgery flag value = NARROW).⁷ Records with one or

³ Barrett M, Lopez-Gonzalez L, Coffey R, Levit K. Population Denominator Data for Use with the HCUP Databases (Updated with 2013 Population Data). HCUP Methods Series Report #2014-02. August 18, 2014. U.S. Agency for Healthcare Research and Quality. <https://www.hcup-us.ahrq.gov/reports/methods/2014-02.pdf>. Accessed September 11, 2014.

⁴ Agency for Healthcare Research and Quality. HCUP Clinical Classifications Software (CCS). Healthcare Cost and Utilization Project (HCUP). Rockville, MD: Agency for Healthcare Research and Quality. Updated July 2014. <http://www.hcup-us.ahrq.gov/toolssoftware/ccs/ccs.jsp>. Accessed August 13, 2014.

⁵ Agency for Healthcare Research and Quality. HCUP Clinical Classifications Software for Services and Procedures. Healthcare Cost and Utilization Project (HCUP). Rockville, MD: Agency for Healthcare Research and Quality. Updated May 2014. www.hcup-us.ahrq.gov/toolssoftware/ccs_svcsproc/ccssvcproc.jsp. Accessed August 13, 2014.

⁶ Agency for Healthcare Research and Quality. HCUP Surgery Flag Software. Healthcare Cost and Utilization Project (HCUP). Rockville, MD: Agency for Healthcare Research and Quality. Updated May 2013. <http://www.hcup-us.ahrq.gov/toolssoftware/surgflags/surgeryflags.jsp>. Accessed August 13, 2014.

⁷ An invasive therapeutic surgical procedure involving incision, excision, manipulation, or suturing of tissue that penetrates or breaks the skin; typically requires use of an operating room; and also requires regional anesthesia, general anesthesia, or sedation to control pain. Guiding key terms include invasive (does not go through an existing orifice); therapeutic; pacemakers; robotic-assisted

more narrow surgery procedures were retained. All procedures that did not meet the narrow surgery definition were dropped from the record.

- The procedure was included when at least 2,000 ambulatory surgery cases occurred across the 28 States in 2012, because the focus of this analysis was on the most frequent procedures done in the ambulatory setting.

In this report, records from the SID meeting the following criteria were included:

- The discharge originated from a hospital with at least 200 inpatient surgical stays. The inpatient facility is designated as a short-term, community, nonrehabilitation hospital.
- Patients were aged 18 years and older.
- The HCUP Surgery Flag software was used to identify procedures that are classified as a surgery based on a narrow definition (surgery flag value = NARROW). Records with one or more narrow surgery flags were retained. All procedures that did not meet the narrow surgery definition were dropped from the record.
- The procedure met the criteria for including procedures from the SASD (i.e., included when at least 2,000 ambulatory surgery cases occurred across the 28 States in 2012, because the focus of this analysis was on the most frequent procedures done in the ambulatory setting).

Types of hospitals included in HCUP State Inpatient Databases

This analysis used State Inpatient Databases (SID) limited to data from community hospitals, which are defined as short-term, non-Federal, general, and other hospitals, excluding hospital units of other institutions (e.g., prisons). Community hospitals include obstetrics and gynecology, otolaryngology, orthopedic, cancer, pediatric, public, and academic medical hospitals. Excluded for this analysis are long-term care facilities such as rehabilitation, psychiatric, and alcoholism and chemical dependency hospitals. However, if a patient received long-term care, rehabilitation, or treatment for psychiatric or chemical dependency conditions in a community hospital, the discharge record for that stay was included in the analysis. We limited the analysis to hospitals with at least 200 inpatient surgical stays per year.

Types of hospitals included in HCUP State Ambulatory Surgery and Services Databases

This analysis used State Ambulatory Surgery and Services Databases (SASD) limited to data from hospital-owned ambulatory surgery facilities. Although some SASD include data from facilities not owned by a hospital, those facilities were excluded from this analysis. The designation of a facility as hospital-owned is specific to its financial relationship with a hospital that provides inpatient care and is not related to its physical location. Ambulatory surgery performed in hospital-owned facilities may be performed within the hospital, in a facility attached to the hospital, or in a facility physically separated from the hospital. The analysis was further limited to ambulatory surgeries performed at facilities owned by community hospitals. Community hospitals are defined as short-term, non-Federal, general, and other specialty hospitals, excluding hospital units of other institutions (e.g., prisons). We limited the analysis to community hospitals with at least 200 ambulatory surgery visits per year.

Unit of analysis

The unit of analysis is the ambulatory surgery visit or hospital discharge (i.e., the hospital stay), not a person or patient. 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 procedure.

About HCUP

The Healthcare Cost and Utilization Project (HCUP, pronounced "H-Cup") is a family of health care databases and related software tools and products developed through a Federal-State-Industry partnership and sponsored by the Agency for Healthcare Research and Quality (AHRQ). HCUP databases bring together the data collection efforts of State data organizations, hospital associations, and private data organizations (HCUP Partners), and the Federal government to create a national information resource of encounter-level health care data. HCUP includes the largest collection of longitudinal hospital care data in the United States, with all-payer, encounter-level information beginning in 1988. These

procedures; laparoscopy; layer closure; complex repair; extensive, complicated; penetrating wound; deep; complicated; and tissue transfer.

databases enable research on a broad range of health policy issues, including cost and quality of health services, medical practice patterns, access to health care programs, and outcomes of treatments at the national, State, and local market levels.

HCUP would not be possible without the contributions of the following data collection Partners from across the United States:

Alaska State Hospital and Nursing Home Association
Arizona Department of Health Services
Arkansas Department of Health
California Office of Statewide Health Planning and Development
Colorado Hospital Association
Connecticut Hospital Association
Florida Agency for Health Care Administration
Georgia Hospital Association
Hawaii Health Information Corporation
Illinois Department of Public Health
Indiana Hospital Association
Iowa Hospital Association
Kansas Hospital Association
Kentucky Cabinet for Health and Family Services
Louisiana Department of Health and Hospitals
Maine Health Data Organization
Maryland Health Services Cost Review Commission
Massachusetts Center for Health Information and Analysis
Michigan Health & Hospital Association
Minnesota Hospital Association
Mississippi Department of Health
Missouri Hospital Industry Data Institute
Montana MHA - An Association of Montana Health Care Providers
Nebraska Hospital Association
Nevada Department of Health and Human Services
New Hampshire Department of Health & Human Services
New Jersey Department of Health
New Mexico Department of Health
New York State Department of Health
North Carolina Department of Health and Human Services
North Dakota (data provided by the Minnesota Hospital Association)
Ohio Hospital Association
Oklahoma State Department of Health
Oregon Association of Hospitals and Health Systems
Oregon Health Policy and Research
Pennsylvania Health Care Cost Containment Council
Rhode Island Department of Health
South Carolina Revenue and Fiscal Affairs Office
South Dakota Association of Healthcare Organizations
Tennessee Hospital Association
Texas Department of State Health Services
Utah Department of Health
Vermont Association of Hospitals and Health Systems
Virginia Health Information
Washington State Department of Health
West Virginia Health Care Authority
Wisconsin Department of Health Services
Wyoming Hospital Association

About Statistical Briefs

HCUP Statistical Briefs are descriptive summary reports presenting statistics on hospital inpatient and emergency department use and costs, quality of care, access to care, medical conditions, procedures, patient populations, and other topics. The reports use HCUP administrative health care data.

About the SASD

The HCUP State Ambulatory Surgery and Services Databases (SASD) include encounter-level data for ambulatory surgeries and may also include various types of outpatient services such as observation stays, lithotripsy, radiation therapy, imaging, chemotherapy, and labor and delivery. The specific types of ambulatory surgery and outpatient services included in each SASD vary by State and data year. All SASD include data from hospital-owned ambulatory surgery facilities. In addition, some States include data from facilities not owned by a hospital. The designation of a facility as hospital-owned is specific to its financial relationship with a hospital that provides inpatient care and is not related to its physical location. Hospital-owned ambulatory surgery and other outpatient care facilities may be contained within the hospital, physically attached to the hospital, or located in a different geographic area. In order to provide information that is comparable across all States, analysis was restricted to hospital-owned ambulatory surgery.

About the SID

The HCUP State Inpatient Databases (SID) are hospital inpatient databases from data organizations participating in HCUP. The SID contain the universe of the inpatient discharge abstracts in the participating HCUP States, translated into a uniform format to facilitate multistate comparisons and analyses. Together, the SID encompass more than 95 percent of all U.S. community hospital discharges in 2012. The SID can be used to investigate questions unique to one State, to compare data from two or more States, to conduct market-area variation analyses, and to identify State-specific trends in inpatient care utilization, access, charges, and outcomes.

For More Information

For more information about HCUP, visit <http://www.hcup-us.ahrq.gov/>.

For additional HCUP statistics, visit HCUPnet, our interactive query system, at <http://hcupnet.ahrq.gov/>.

For information on other hospitalizations in the United States, refer to the following HCUP Statistical Briefs located at <http://www.hcup-us.ahrq.gov/reports/statbriefs/statbriefs.jsp>:

- Statistical Brief #180, Overview of Hospital Stays in the United States, 2012
- Statistical Brief #181, Costs for Hospital Stays in the United States, 2012
- Statistical Brief #186, Most Frequent Operating Room Procedures Performed in U.S. Hospitals, 2003–2012
- Statistical Brief #162, Most Frequent Conditions in U.S. Hospitals, 2011

For a detailed description of HCUP and more information on the design of the State Ambulatory Surgery and Services Databases (SASD) and State Inpatient Databases (SID), please refer to the following database documentation:

Agency for Healthcare Research and Quality. Overview of the State Ambulatory Surgery and Services Databases (SASD). Healthcare Cost and Utilization Project (HCUP). Rockville, MD: Agency for Healthcare Research and Quality. Updated November 2014. <http://www.hcup-us.ahrq.gov/sasdooverview.jsp>. Accessed December 15, 2014.

Agency for Healthcare Research and Quality. Overview of the State Inpatient Databases (SID). Healthcare Cost and Utilization Project (HCUP). Rockville, MD: Agency for Healthcare Research and

Quality. Updated September 2014. <http://www.hcup-us.ahrq.gov/sidoverview.jsp>. Accessed September 11, 2014.

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AHRQ welcomes questions and comments from readers of this publication who are interested in obtaining more information about access, cost, use, financing, and quality of health care in the United States. We also invite you to tell us how you are using this Statistical Brief 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:

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