

An error discovered in the processing of the 2006 National Survey of Ambulatory Surgery procedure data resulted in a revised data set. All analyses involving procedure data were rerun and some reported findings have changed. The required revisions have been made. In addition, some standard errors for both visits and procedures were printed incorrectly in the original report and these have been corrected in this revised report. For more information, see the explanation at the end of the report.

# National Health Statistics Reports

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## Ambulatory Surgery in the United States, 2006

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### Abstract

**Objectives**—This report presents national estimates of surgical and nonsurgical procedures performed on an ambulatory basis in hospitals and freestanding ambulatory surgery centers in the United States during 2006. Data are presented by types of facilities, age and sex of the patients, and geographic regions. Major categories of procedures and diagnoses are shown by age and sex. Selected estimates are compared between 1996 and 2006.

**Methods**—The estimates are based on data collected through the 2006 National Survey of Ambulatory Surgery by the Centers for Disease Control and Prevention's National Center for Health Statistics (NCHS). The survey was conducted from 1994–1996 and again in 2006. Diagnoses and procedures presented are coded using the *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD–9–CM).

**Results**—In 2006, an estimated 53.3 million surgical and nonsurgical procedures were performed during 34.7 million ambulatory surgery visits. Of the 34.7 million visits, 19.9 million occurred in hospitals and 14.9 million occurred in freestanding ambulatory surgery centers. The rate of visits to freestanding ambulatory surgery centers increased about 300 percent from 1996 to 2006, whereas the rate of visits to hospital-based surgery centers remained largely unchanged during that time period. Females had significantly more ambulatory surgery visits (20.0 million) than males (14.7 million), and a significantly higher rate of visits (132.0 per 1,000 population) compared with males (100.4 per 1,000 population).

Average times for surgical visits were higher for ambulatory surgery visits to hospital-based ambulatory surgery centers than for visits to freestanding ambulatory surgery centers for the amount of time spent in the operating room (61.7 minutes compared with 43.2 minutes), the amount of time spent in surgery (34.2 minutes compared with 25.1 minutes), the amount of time spent in the postoperative recovery room (79.0 minutes compared with 53.1 minutes), and overall time (146.6 minutes compared with 97.7 minutes).

Although the majority of visits had only one or two procedures performed (59.8 percent and 27.7 percent, respectively), 1.0 percent had five or more procedures performed. Frequently performed procedures on ambulatory surgery patients included endoscopy of large intestine (5.7 million), endoscopy of small intestine (3.5 million), extraction of lens (3.1 million), injection of agent into spinal canal (2.0 million), and insertion of prosthetic lens (2.6 million). The leading diagnoses at ambulatory surgery visits included cataract (3.0 million); benign neoplasms (2.0 million), malignant neoplasms (1.2 million), diseases of the esophagus (1.1 million), and diverticula of the intestine (1.1 million).

**Keywords:** Outpatients • Diagnoses • Procedures • ICD–9–CM • National Survey of Ambulatory Surgery

### Introduction

This report presents data from the 2006 National Survey of Ambulatory Surgery (NSAS). The survey, previously conducted annually from 1994 through 1996, was conducted by NCHS to gather and disseminate data about ambulatory surgery in the United States. For NSAS, ambulatory surgery refers to surgical and nonsurgical procedures performed on an ambulatory (outpatient) basis in a hospital or freestanding center's general operating rooms, dedicated ambulatory surgery rooms, and other specialized rooms, such as endoscopy units and cardiac catheterization laboratories. NSAS is the principal source for national data on the characteristics of visits to hospital-based and freestanding ambulatory surgery centers.

Ambulatory surgery has been increasing in the United States since the early 1980s. Two major reasons for the increase are advances in medical technology and changes in payment arrangements. The medical advances include improvements in anesthesia, which enable patients to regain consciousness more quickly with fewer after effects and better analgesics for relief of pain. In addition, minimally invasive and noninvasive procedures have been developed and are being used with increasing frequency. Examples include laser surgery, laparoscopy, and endoscopy. These medical advances have made surgery less complex and risky (1) and have allowed many



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procedures to move from inpatient to ambulatory settings (2–6).

At the same time, concern about rising health care costs led to changes in the Medicare program that encouraged the development of ambulatory surgery. In the early 1980s, the Medicare program was expanded to cover care in ambulatory surgery centers, and a prospective payment system based on diagnosis-related groups was adopted for hospital inpatient care that created strong financial incentives for hospitals to shift less complex surgery to outpatient settings. Many state Medicaid plans and private insurers followed the lead of the Medicare program and adopted similar policies (7).

Additional changes in the health care system, such as the growth of managed care along with consolidation of hospitals, have furthered the growth of ambulatory surgery (3,8). As these changes occurred, many types of surgeries done in hospitals were increasingly performed during ambulatory visits. Both in conjunction with and as a result of these changes, the number of freestanding ambulatory surgery centers (ASCs) grew from 239 in 1983 (9) to over 3,300 nearly two decades later (3,10). The number of procedures being performed in ASCs also increased dramatically—from 380,000 procedures in 1983 to 31.5 million in 1996 (5).

The National Hospital Discharge Survey (NHDS), which has been conducted by NCHS every year since 1965, includes information on surgical and nonsurgical procedures performed in inpatient settings (11–13). Although NHDS remains a good source of data for procedures that can be done only on an inpatient basis, such as open-heart surgery or cesarean delivery, NHDS estimates have become incomplete for procedures that can be performed on an ambulatory basis. NSAS was undertaken to obtain information about ambulatory procedures. For many types of procedures, data from both NHDS and NSAS are now required to obtain national estimates. Reports that present both ambulatory and inpatient procedure data for 1994, 1995, and 1996 have been published (14–16).

NSAS and NHDS are two of the NCHS provider-based surveys that constitute the National Health Care Surveys (NHCS). The NHCS were designed to provide nationally representative data on the use of health care resources of major sectors of the health care delivery system. Information on ambulatory procedures is also collected in two other NHCS surveys. The National Ambulatory Medical Care Survey obtains information on procedures ordered or performed during visits to physicians' offices (17), and the National Hospital Ambulatory Medical Care Survey (NHAMCS) collects data on procedures ordered or performed during visits to hospital outpatient and emergency departments (18).

## Methods

### Data source

NSAS covers procedures performed in ambulatory surgery centers, both hospital-based and freestanding. The hospital universe includes noninstitutional hospitals exclusive of federal, military, and Department of Veterans Affairs hospitals located in the 50 states and the District of Columbia. Only short-stay hospitals (hospitals with an average length of stay for all patients of fewer than 30 days), or those whose specialty was general (medical or surgical), or children's general were included in the survey. These hospitals must also have had six beds or more staffed for patient use. This universe definition is the same as that used for the NHDS and the NHAMCS. For the 2006 NSAS, the hospital sample frame was constructed from the products of Verispan, L.L.C., specifically its "Healthcare Market Index, Updated June 15, 2005" and its "Hospital Market Profiling Solution, Second Quarter, 2005" (19). These products were formerly known as the SMG Hospital Market Database. In 2006, the sample consisted of 224 hospitals. Of the 224 hospitals, 35 were found to be out-of-scope (ineligible) because they went out of business or otherwise failed to meet the criteria for the NSAS universe. Of the 189 in-scope (eligible)

hospitals, 142 hospitals responded to the survey for a response rate of 75.1%.

The universe of freestanding facilities included ones that were regulated by the states or certified by the Centers for Medicare & Medicaid Services (CMS) for Medicare participation. The sampling frame consisted of facilities listed in the 2005 Verispan Freestanding Outpatient Surgery Center Database (20) and Medicare-certified facilities included in the CMS Provider-of-Services (POS) file (21). Facilities specializing in dentistry, podiatry, abortion, family planning, or birthing were excluded. However, procedures commonly found in these settings were not excluded from in-scope locations. In 1994–1996, pain block locations were also excluded; however, they were included in the 2006 NSAS. In 2006, the sample consisted of 472 freestanding ASCs. Of the 472 freestanding ambulatory surgery centers, 74 were found to be out-of-scope (ineligible) because they failed to meet the criteria for the NSAS universe. Of the 398 in-scope (eligible) freestanding ambulatory surgery centers, 295 responded to the survey for a response rate of 74.1%. The overall response rate was 74.4%.

### Sample design

The NSAS sampled facilities were selected using a multistage probability design with facilities having varying selection probabilities. Independent samples of hospitals and freestanding ambulatory surgery centers were drawn. Unlike the 1994–1996 NSAS, which used a three-stage stratified cluster design, with the first stage consisting of geographic primary sampling units or PSUs, the 2006 NSAS used a two-stage list-based sample design. Facilities were stratified by facility type (hospital compared with freestanding), ambulatory surgery status of hospitals (i.e., whether or not the hospital performed such surgery), facility specialty, and geographic region.

The first stage of the design consisted of selection of facilities using systematic random sampling with probabilities proportional to the annual

number of ambulatory surgeries performed. For the stratum of hospitals which, according to the sampling frame data, did not have ambulatory surgery, a national sample of 25 hospitals was selected to permit estimates of surgery in hospitals that either added ambulatory surgery since the frame was selected or differed from the frame.

At the second stage, within sampled facilities, a sample of ambulatory surgery visits was selected using a systematic random sampling procedure. Selection of visits within each facility was performed separately for each location where ambulatory surgery was performed. These locations included main operating rooms; dedicated ambulatory surgery units; cardiac catheterization laboratories; and rooms for laser procedures, endoscopy, and laparoscopy. Locations within hospitals dedicated exclusively to abortion, dentistry, podiatry, or small procedures were not included. The exclusion of these specialty locations, as well as the exclusion of facilities dedicated exclusively to those specialties, was recommended based on the feasibility study for the NSAS that was conducted in 1989–1991. Based on the recommendation of outside experts who were consulted prior to the design of the 2006 NSAS, the 2006 NSAS includes pain block facilities, whereas the 1994–1996 NSAS did not (22). Because NSAS data are collected from a sample of visits, persons with multiple visits during the year may be sampled more than once. NSAS estimates are of the number of visits to or procedures performed in ambulatory surgery facilities, not the number of persons served by these facilities.

## Data collection

Sample selection and abstraction of information from medical records were performed at the facilities. Facility staff did the sampling in about 40 percent of facilities that participated in the 2006 survey, and facility staff abstracted the data in about 30 percent of the participating facilities. In the remaining facilities, the work was performed by personnel of the U.S. Census Bureau

acting on behalf of NCHS. Data processing and medical coding were performed by the Constella Group Inc., Durham, North Carolina. Editing and estimation were completed at NCHS.

The abstract form (“**Technical Notes**”) contains items relating to the personal characteristics of the patients such as age, sex, race, and ethnicity; and administrative items such as date of procedure, disposition, and expected sources of payment. The medical information includes up to seven diagnoses and six procedures, which were coded according to the *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD–9–CM) (23).

A quality control program was conducted on the coding and entering of data from abstracts to electronic form. Approximately 10 percent of the abstractions were independently recoded by an NSAS coder at the Constella Group, Inc., with discrepancies resolved by a chief coder. The overall error rate for the 2006 NSAS was 0.3 percent for diagnosis coding and keying, 0.2 percent for procedure coding and keying, and 0.3 percent for demographic coding and keying.

## Estimation

Because of the complex multistage design of the NSAS, the survey data must be inflated or weighted in order to produce national estimates. The estimation procedure produces essentially unbiased national estimates, and has three basic components: inflation by reciprocals of the probabilities of sample selection, adjustment for nonresponse, and population weighting ratio adjustments. These three components of the final weight are described in more detail in another report (22).

## Standard errors

The standard error (SE) is primarily a measure of sampling variability that occurs by chance because only a sample, rather than the entire universe, is surveyed. Estimates of the sampling variability for this report were calculated

using Taylor approximations in SUDAAN, which takes into account the complex sample design of the NSAS. A description of the software and the approach it uses has been published (24). The SEs of statistics presented in this report are included in each of the tables.

## Testing of significance and rounding

In this report, statistical inference is based on the two-sided *t*-test with a critical value of 2.58 (0.01 level of significance). Terms such as “higher” and “less” indicate that differences are statistically significant. Terms such as “similar” or “no difference” mean that no statistically significant difference exists between the estimates being compared. A lack of comment on the difference between any two estimates does not mean that the difference was tested and found not to be significant.

The feasibility of using one weight to calculate estimates and variances was assessed to determine whether the SEs produced from the single-weight variable were for the most part greater than the SEs produced by the variance weights for the same estimates. For certain estimates, the single weights produced variances that underestimated the true variances. This underestimation can lead to Type I errors in which the null hypothesis is incorrectly rejected when using the commonly used significance level of  $\alpha=0.05$ . As a result, the decision was made that an alpha of 0.01 should be used to reduce the likelihood of committing a Type I error.

Estimates of counts in the tables have been rounded to the nearest thousand. Therefore, figures within tables do not always add to the totals. Rates and percentages were calculated from unrounded figures and may not precisely agree with rates or percentages calculated from rounded data.

## Nonsampling error

As in any survey, results are subject to both sampling and nonsampling errors. Nonsampling errors include

reporting and processing errors as well as biases due to nonresponse and incomplete response. The magnitude of the nonsampling errors cannot be computed. However, these errors were kept to a minimum by procedures built into the operation of the survey. To eliminate ambiguities and to encourage uniform reporting, attention was given to the phrasing of items, terms, and definitions. Quality control procedures and consistency and edit checks reduced errors in data coding and processing. The unweighted response rate for the 2006 NSAS was 74.4%. [Table 1](#) presents weighted characteristics of NSAS respondents and nonrespondents, along with weighted response rates. Responding compared with nonresponding distributions were similar, with the exception of higher cooperation among facilities in a nonmetropolitan statistical area. The effect of this differential response is minimized in the visit estimates in most cases, as NSAS uses a nonresponse adjustment factor that takes annual visit volume, specialty, facility type, and geographic region into account. Item nonresponse rates in NSAS are generally low (5% or fewer). However, levels of nonresponse may vary considerably in the survey.

NSAS does not completely measure ambulatory procedures that are performed in locations such as physicians' offices, for example, injections of therapeutic substances, skin biopsies, and certain plastic surgery procedures. The National Ambulatory Medical Care Survey has data about procedures in physicians' offices (17) and the National Hospital Ambulatory Medical Care Survey provides information about procedures in other hospital outpatient and emergency departments (18). As medical technology continues to advance and changes in payment policy promote it, increasing numbers and types of procedures may move from NSAS facilities to elsewhere.

Because certain freestanding facilities and certain specialized locations within hospitals and freestanding facilities are excluded from the NSAS design, ambulatory

procedures performed in some specialties are not completely measured by the survey. Excluded specialties include dentistry, podiatry, abortion, family planning, and birthing; and locations that perform small procedures, such as removal of skin lesions, were also excluded. However, procedures in these specialties performed in general operating rooms or other in-scope locations are included in the survey.

The determination of whether an ambulatory surgery facility is a hospital or a freestanding center is based on the universe from which the facility was selected. In most cases, it was apparent whether a facility was a hospital or a freestanding ambulatory surgery center, but some facilities were not easily classified. For example, a "freestanding" facility may be owned by a hospital but located some distance away. If such a facility is separately listed in the 2005 Verispan Freestanding Outpatient Surgery Center Database or in the CMS POS file and is selected into the NSAS sample from this universe, it is considered a freestanding facility. Additional definitions of terms used in the NSAS have been published (22).

## Use of tables

The statistics presented in this report are based on a sample, and therefore may differ from the figures that would be obtained if a complete census had been taken. Visits are reported by first-listed diagnosis, which is the one specified as the principal diagnosis on the face sheet or discharge summary of the medical record, or if a principal diagnosis was not specified, the first one listed on the face sheet or discharge summary of the medical record. It was usually the main cause of the visit. The number of first-listed diagnoses is the same as the number of visits.

The estimates shown in this report include surgical procedures, such as tonsillectomy; diagnostic procedures, such as ultrasound; and other therapeutic procedures, such as injection or infusion of cancer chemotherapeutic substance. Up to six procedures are coded for each

visit. All-listed procedures include all occurrences of the procedure coded regardless of the order on the medical record.

The diagnoses and procedures appear in separate tables of this report, presented by chapter of the ICD-9-CM. Within these chapters, subcategories of diagnoses or procedures are shown. These specific categories were selected primarily because of their large numbers or because they are of special interest.

According to the 2006 NSAS, an estimated 287,000 ambulatory surgery visits with procedures were admitted to the hospital as inpatients. Of these, 269,000 (93.8 percent) were visits to hospitals and 18,000 (6.2 percent) were visits to freestanding centers. In most instances, the ambulatory procedures for these patients become part of their inpatient records. People admitted as inpatients were included in this report, and procedures for these patients were included in the summaries of outpatient procedures, as described in the first version of this report for 1994 (5). These patients were excluded in the 1995 and 1996 *Advance Data Reports* (4,5) and will be excluded to avoid double counting from the Series 13 report in which data from the 2006 NHDS and 2006 NSAS will be presented together, following the same process as reports published using the 1994–1996 data (14–16).

The chances are about 40 in 100 that an estimate from the sample would differ from a complete census by more than the SE. The chances are 9 in 100 that the difference would be more than twice the SE, and about 4 in 100 that the difference would be more than 2.5 times as large as the SE.

The relative standard error (RSE) of an estimate is obtained by dividing the SE by the estimate itself. The RSE is expressed as a percentage of an estimate and can be multiplied by the estimate to obtain the SE. Because of low reliability, estimates with a RSE of more than 30 percent or those based on a sample of fewer than 30 records are replaced by asterisks (\*). The estimates that are based on 30 to 59 patient records are preceded by an asterisk (\*) to indicate that they also have low reliability.

The population estimates used in computing rates are for the U.S. civilian population, including institutionalized persons, as of July 1, 2006. Rates are computed using adjustments made after the 2000 census (postcensal estimates) of the civilian population of the United States. The data are from unpublished tabulations provided by the U.S. Census Bureau. Facilities are classified by location into one of the four geographic regions of the United States that correspond to those used by the U.S. Census Bureau.

## Results

### Patient and facility characteristics

- In 2006, an estimated 53.3 million surgical and nonsurgical procedures were performed during 34.7 million ambulatory surgery visits (Table 2).
- The 34.7 million ambulatory surgery visits accounted for about 61.6 percent of the combined total of ambulatory surgery visits and inpatient discharges with surgical and nonsurgical procedures (56.4 million) (Figure 1).
- An estimated 19.9 million (57.2 percent) of the ambulatory surgery visits occurred in hospitals and 14.9 million (42.8 percent) occurred in freestanding centers (Table 2, Figure 2).
- From 1996 to 2006, the change in the rate of visits to freestanding centers was larger than that for visits to hospital-based ambulatory surgery centers. The rate of visits to freestanding ambulatory surgery centers increased about 300 percent from 1996 to 2006, while the rate in hospital-based centers was flat (Figure 3).
- Females had significantly more ambulatory surgery visits (20.0 million) than males (14.7 million), and a significantly higher rate of visits (132.0 per 1,000 population) compared with males (100.4 per 1,000 population) (Table 2).
- Although the vast majority of ambulatory surgery visits had routine

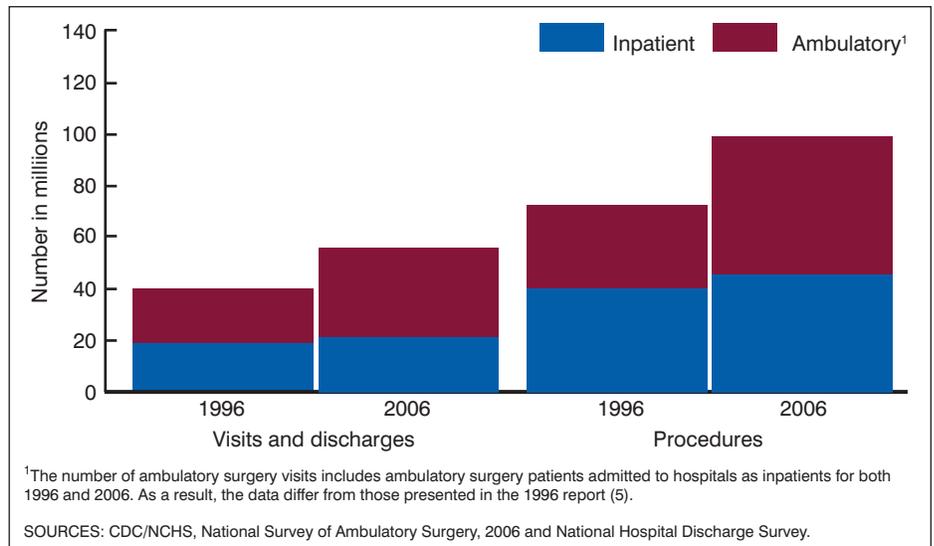


Figure 1. Ambulatory surgery visits and discharges of hospital inpatients with procedures: United States, 1996 and 2006 (revised)

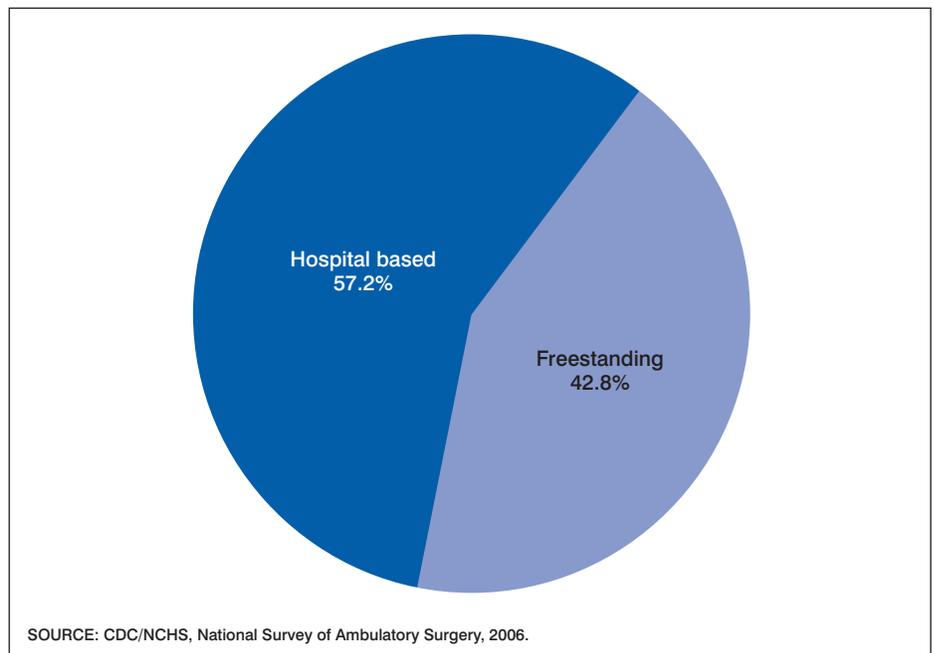


Figure 2. Percent distribution of ambulatory surgery visits by type of facility: United States, 2006

discharges (93.1 percent), 0.8 percent were admitted as inpatients (Table 3).

- Although general anesthesia alone was provided in 30.7 percent of ambulatory surgery visits, 20.8 percent received anesthesia only intravenously, and 20.8 percent received multiple types of anesthesia (data not shown).

### Surgical times for ambulatory surgery visits

- Total time is defined as the length of time from when the patient enters the operating room to the time he or she leaves postoperative care. Operating room time is the length of time the patient is in the operating room. The surgical time is the portion of the

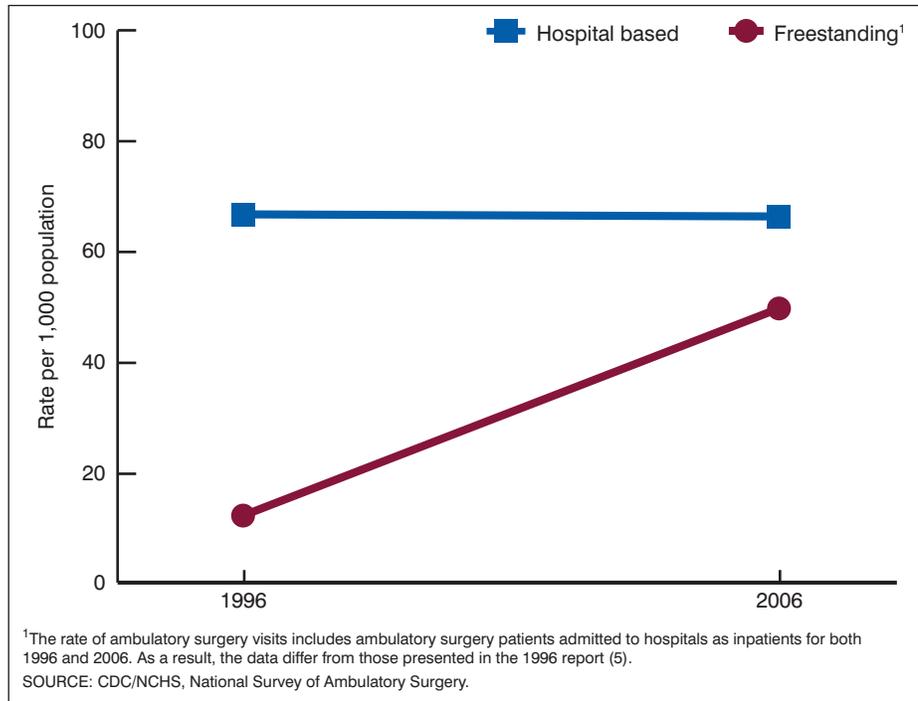


Figure 3. Rates of ambulatory surgery visits by facility type: United States, 1996 and 2006

time spent in the operating room during which the surgical procedure occurs. Typically, the surgical time is the time from when the incision is made until the wound is closed. After the surgical procedure, the patient recovers in the postoperative room before he or she is discharged; the time spent here is considered the post operative room time. Average times for surgical visits were higher for ambulatory surgery visits to hospital-based ambulatory surgery centers than for visits to freestanding ambulatory surgery centers for the amount of time spent in the operating room (61.7 minutes compared with 43.2 minutes), the amount of time spent in surgery (34.2 minutes compared with 25.1 minutes), the amount of time spent in the postoperative recovery room (79.0 minutes compared with 53.1 minutes), and overall time (146.6 minutes compared with 97.7 minutes) (Table 4).

- The average time spent in surgery also varied with the diagnosis. The average surgical time for inguinal hernia diagnoses was more than twice

that for diagnoses of benign neoplasm of the colon (49.4 minutes compared with 21.8 minutes) (Table 5).

### Ambulatory procedures

- Females had significantly more ambulatory surgery procedures (30.6 million) than males (22.7 million) and a significantly higher rate of procedures (2,020.2 per 10,000 population) than males (1,548.1 per 10,000 population) (Tables 6,7). This was driven by differences for females between 15 and 64 years of age (Figure 4).
- Although the majority of visits had only one or two procedures performed (59.8 percent and 27.7 percent, respectively), 1.0 percent had five or more procedures performed (Figure 5).
- Frequently performed procedures on ambulatory patients included endoscopy of large intestine (5.7 million), endoscopy of the small intestine (3.5 million), extraction of lens (3.1 million), injection of agent into spinal canal (2.0 million), and insertion of prosthetic lens (2.6 million) (Table 6).

- Females had higher rates per 10,000 population than males for certain ambulatory procedures, such as extraction (125.5 compared with 78.8) and insertion (105.2 compared with 67.4) of lens and endoscopy of the small (134.7 compared with 97.1) and large (217.8 compared with 166.4) intestine (Table 7).
- Ambulatory procedures often performed on children under 15 years included myringotomy with insertion of tube (667,000), tonsillectomy with or without adenoidectomy (530,000), and adenoidectomy without tonsillectomy (132,000) (Table 6).
- Common ambulatory procedures for persons 15–44 years of age were endoscopy of large intestine (779,000); endoscopy of small intestine (770,000); injection of agent into spinal canal (533,000); injection or infusion of therapeutic or prophylactic substance (429,000); and operations on muscle, tendon, fascia, and bursa (403,000) (Table 6).
- Ambulatory surgery procedures commonly performed on persons 45–64 years of age were endoscopy of large intestine (2.9 million), endoscopy of small intestine (1.4 million), injection of agent into spinal canal (835,000), and operations on muscle, tendon, fascia and bursa (755,000) (Table 6).
- For persons 65–74 years of age, endoscopy of large intestine (1.2 million), extraction of lens (1.1 million), insertion of lens (923,000), endoscopy of small intestine (648,000), and endoscopic polypectomy of the large intestine (424,000) were the most frequent ambulatory procedures (Table 6).
- Common ambulatory procedures for those 75 years of age or over were extraction of lens (1.3 million), insertion of lens (1.1 million), endoscopy of large intestine (778,000), endoscopy of small intestine (550,000), and injection of agent into spinal canal (336,000) (Table 6).

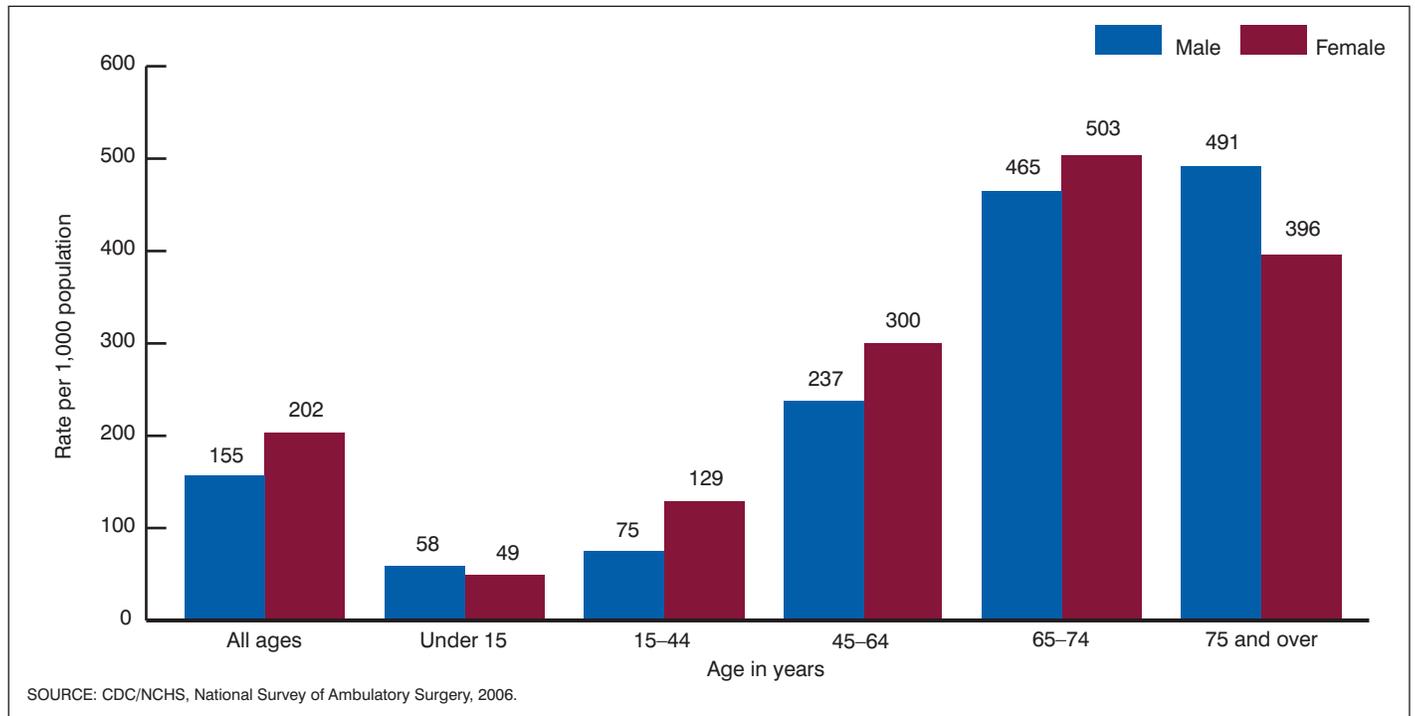


Figure 4. Rate of ambulatory surgery procedures by age and sex: United States, 2006 (revised)

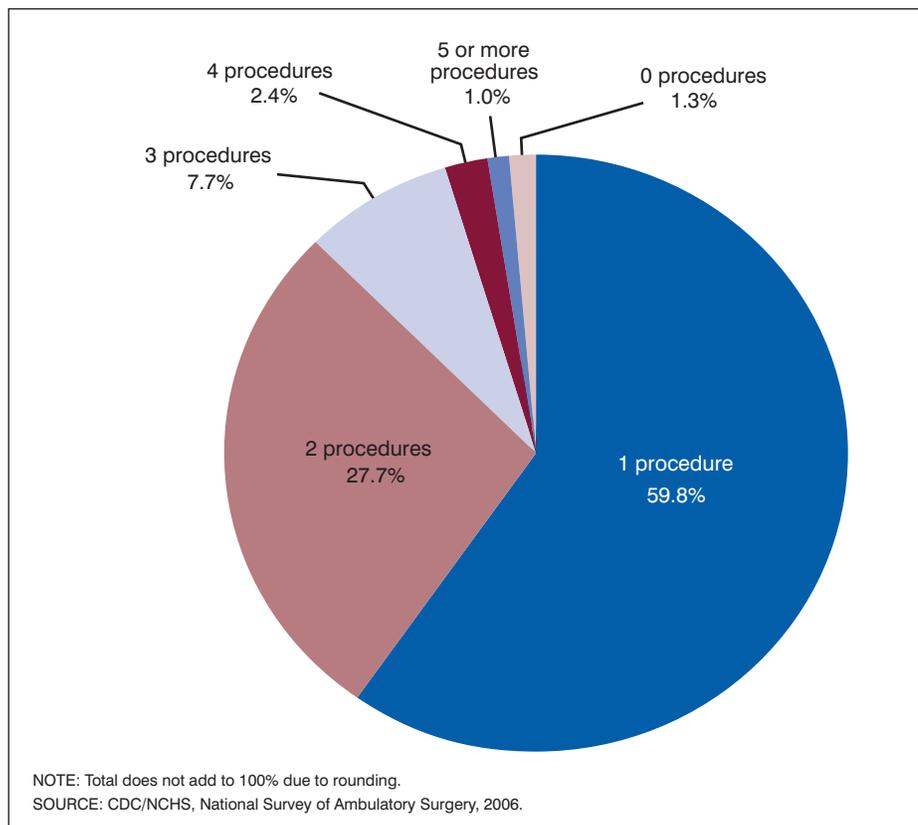


Figure 5. Percent distribution of the number of ambulatory surgery procedures performed per visit: United States, 2006 (revised)

### Diagnoses for ambulatory surgery visits

- The leading diagnoses at ambulatory surgery visits included cataract (3.0 million); benign neoplasms (2.0 million), malignant neoplasms (1.2 million), diseases of the esophagus (1.1 million), and diverticula of the intestine (1.1 million) (Table 8).
- Rates of ambulatory surgery visits per 10,000 population varied by gender. For example, the rate of ambulatory surgery visits was higher for females than for males for first-listed diagnoses of cataract (123.5 compared with 77.5) (Table 9).

### Discussion

**May 2009 revisions of NSAS 2006 data file originally released on October 22, 2008**

#### Identification of a double coding issue with NSAS 2006 data set

The 2006 NSAS public-use data files were released in October 2008. A

researcher contacted NCHS in mid February questioning the fact that the number of myringotomies in the 2006 NSAS was double the number of children under 15 years of age receiving this procedure. In the 1996 NSAS data, there was close to a one-to-one correspondence between these two estimates. The reason for the difference was that in 1996, myringotomy was coded once per record, even if the procedure was performed bilaterally; in 2006, myringotomy was coded twice if performed bilaterally. This inconsistency was unintentional.

Given this inconsistency, the entire 2006 NSAS data set was examined to see if there were other records with multiple identical procedure codes. It was determined that a total of 4,923 records (including myringotomies) of the original 52,233 records in 2006 NSAS had multiple coding (approximately 9%). Double coding was present in only 35 records of 125,000 in the 1996 NSAS.

**Coding guidelines followed for the 2006 NSAS data**

The 1994–1996 NSAS procedure coding guidelines were based upon *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD–9–CM) inpatient coding guidelines that were in effect at that time. With the use of these guidelines, multiple coding rarely occurred, even if bilateral or other multiple procedures codes were listed in the record more than one time. Instead of using these ICD–9–CM inpatient coding guidelines, the 2006 NSAS used National Hospital Ambulatory Medical Care Survey (NHAMCS) procedure coding guidelines. Although NHAMCS guidelines were also based on ICD–9–CM codes, they differed in allowing double coding if the following circumstances occurred: if more than one site was specified, if a procedure was bilateral, and if an abstractor recorded a procedure multiple times. In NHAMCS, an editing process removed all double codes that were determined to be inappropriate. However, this step in the editing process was not incorporated

**Table A. A comparison of estimates of procedures from Table 2, by selected characteristics: United States, 2006**

Characteristic	Original NSAS (Number in thousands)	Revised NSAS (Number in thousands)	Revised/original (Percent)	Decrease	Percent decrease
Total procedures . . . . .	57,062	53,329	93.5	3,733	7
Facility type					
Hospital based. . . . .	32,320	30,761	95.2	1,559	5
Freestanding. . . . .	24,742	22,568	91.2	2,174	9
Male					
Hospital based. . . . .	14,051	13,286	94.6	765	5
Freestanding. . . . .	10,277	9,395	91.4	882	9
Female					
Hospital-based. . . . .	18,270	17,475	95.6	795	4
Freestanding. . . . .	14,465	13,173	91.1	1,292	9
Region					
Northeast . . . . .	8,551	8,018	93.8	533	6
Midwest . . . . .	13,583	12,575	92.6	1,008	7
South . . . . .	25,509	24,023	94.2	1,486	6
West . . . . .	9,420	8,713	92.5	707	8
Male					
Northeast . . . . .	3,710	3,486	94.0	224	6
Midwest . . . . .	5,803	5,321	91.7	482	8
South . . . . .	10,755	10,143	94.3	612	6
West . . . . .	4,060	3,730	91.9	330	8
Female					
Northeast . . . . .	4,841	4,532	93.6	309	6
Midwest . . . . .	7,780	7,254	93.2	526	7
South . . . . .	14,754	13,879	94.1	875	6
West . . . . .	5,359	4,983	93.0	376	7
Metropolitan status					
Metropolitan statistical area . . . . .	48,874	45,691	93.5	3,183	7
Nonmetropolitan statistical area . . . . .	8,189	7,638	93.3	551	7
Male					
Metropolitan statistical area . . . . .	20,821	19,399	93.2	1,422	7
Nonmetropolitan statistical area . . . . .	3,507	3,282	93.6	225	6
Female					
Metropolitan statistical area . . . . .	28,053	26,292	93.7	1,761	6
Nonmetropolitan statistical area . . . . .	4,682	4,356	93.0	326	7

NOTES: Table A is a comparison of the January 28, 2009, *National Health Statistics Report*, Number 11, procedure estimates (taken from Table 2) to the revised estimates in this September 4, 2009, revision. NSAS is the National Survey of Ambulatory Surgery.

into the 2006 NSAS data production, thereby creating the double coding issue.

**Revising the NSAS Data Set and How It Affected the Data**

To maintain comparability with the 1994–1996 NSAS data, since multiple codes were not included in the 1996 NSAS, all multiple procedure codes were removed from the 2006 NSAS data. As a result, the estimate for the total number of 2006 NSAS procedures fell from 57,062,000 to 53,329,000, a

6.5% decrease. Categories were differentially affected. [Tables A and B](#) show the 2006 NSAS original and the 2006 NSAS revised estimates for some of the major procedure categories included in this and the January 28, 2009, NSAS *National Health Statistics Report*. The tables also include ratios of the revised estimates to the original estimates to show relative changes. As expected, the revised estimates decreased most for bilateral and other multiple site procedures.

**Table B. A comparison of estimates of procedures from Table 6, by selected characteristics: United States, 2006**

Characteristic	Original NSAS (Number in thousands)	Revised NSAS (Number in thousands)	Revised/original (Percent)	Decrease	Percent decrease
Total procedures	57,062	53,329	93.5	3,733	7
Age					
Under 15 years	4,034	3,266	81.0	768	19
15–44 years	13,691	12,780	93.3	911	7
45–64 years	21,369	20,167	94.4	1,202	6
65–74 years	9,622	9,182	95.4	440	5
75 years and over	8,345	7,934	95.1	411	5
Sex					
Male	24,328	22,681	93.2	1,647	7
Female	32,734	30,648	93.6	2,086	6
Procedure category					
Nervous system	4,106	3,198	77.9	908	22
Eye	7,296	7,085	97.1	211	3
Ear	1,723	1,114	64.7	609	35
Nose, mouth, and pharynx	3,179	2,864	90.1	315	10
Respiratory system	448	445	99.3	3	1
Cardiovascular system	1,395	1,376	98.6	19	1
Digestive system	14,677	14,414	98.2	263	2
Urinary system	1,799	1,776	98.7	23	1
Male genital organs	655	631	96.3	24	4
Female genital organs	2,503	2,497	99.8	6	0.2
Musculoskeletal system	8,439	7,944	94.1	495	6
Integumentary system	4,108	3,581	87.2	527	13
Misc diagnostic/therapeutic and new technologies	6,387	6,060	94.9	327	5
Other (includes endocrine system, hemic and lymphatic system, and obstetrical procedures)	346	344	99.4	2	1

NOTES: Table B is a comparison of the January 28, 2009, *National Health Statistics Reports*, Number 11, procedure estimates (taken from Table 6) to the revised estimates in this September 4, 2009, revision. NSAS is the National Survey of Ambulatory Surgery.

**The procedure estimates for the following chapters were most affected by the deletion of multiple codes:**

- Operations on the nervous system decreased 22% largely due to multiple coding of injection of agent into spinal canal.
- Operations on the ear decreased 35% largely due to double coding of myringotomy with insertion of tube.
- Operations on the nose, mouth, and pharynx decreased 10%.
- Operations on the integumentary system decreased 13% largely due to multiple coding of excision or destruction of lesion or tissue of skin and subcutaneous tissue.

Since myringotomies are a common procedure for children, estimates for both myringotomies and for overall

procedures for children decreased a great deal after double coding was eliminated. The children’s estimate decreased by 19% and the myringotomy estimate decreased by 44%.

**Steps taken to improve coding in the future**

A coding manual for the 2009 Ambulatory Surgical Center (ASC) data (now being gathered through NHAMCS) that clarifies the multiple coding issue is being prepared for coding of NHAMCS data. The differences between CPT and ICD–9–CM coding principles are discussed in the new manual along with what to do if the record contains only CPT codes. For the 2009 coding of ASC data, a crosswalk has been developed to generate ICD–9–CM codes from CPT codes. Instructions detailing how to

handle duplicate codes are also included.

When the 2009 NHAMCS data are processed, NCHS will examine all double coding and remove any codes that are found to be inappropriate.

Your suggestions are welcomed on how to handle multiple codes in future ASC data. Please send any suggestions to Nancy Sonnenfeld at [nsonnenfeld@cdc.gov](mailto:nsonnenfeld@cdc.gov).

**Steps data users should take upon receiving the revised data**

All data analyses based on the original NSAS data set should not be used. Instead, the analyses should be rerun using the revised data set. Similarly, any estimates or standard errors taken from the original NSAS *National Health Statistics Reports* (January 28, 2009) should not be used. Instead, these numbers should be obtained from this revised (September 4, 2009) report. Changes in this report are not limited to procedure estimates and standard errors affected by the method of handling multiple codes. Printing errors were also discovered, which affected some of the standard errors for visits and for procedures. These errors have been corrected in this revised report.

**What has changed in the revised NSAS data set**

As was indicated previously in the discussion of the data set revision, the estimates of some procedures (PROC1-PROC6), particularly those that were coded multiple times, have changed. They are lower because duplicates have been deleted. The values for other variables that were derived from the procedure data had to be derived again from the newer data set. The variables affected were NUMPROC (number of procedures per visit), SGFLAG1-SGFLAG6 (flags indicating if the procedures were surgical or nonsurgical), and PD1CLASS-PD6CLASS (the Agency for Health Care Research and Quality’s Procedure Class Tool variables). Because of the changes in certain estimates, standard errors for these estimates may also have changed.

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**Table 1. Characteristics of the 2006 National Survey of Ambulatory Surgery facility respondents and nonrespondents: United States**

Facility characteristic	Number of sampled in-scope facilities	Total percent distribution (weighted)	Responding facility percent distribution (weighted)	Nonresponding facility percent distribution (weighted)	Weighted response rate	Standard error
All facilities . . . . .	587	100.0	100.0	100.0	83.7	2.6
Facility type						
Hospital based . . . . .	189	49.9	51.2	43.1	85.9	3.8
Freestanding . . . . .	398	50.1	48.8	56.9	81.5	3.3
Geographic region						
Northeast . . . . .	90	11.7	12.5	8.2	88.7	4.5
Midwest . . . . .	126	24.1	23.7	25.9	82.5	6.8
South . . . . .	222	40.4	41.8	33.2	86.6	3.6
West . . . . .	149	23.7	22.0	32.8	77.5	5.2
Metropolitan status <sup>1</sup>						
Metropolitan statistical area . . . . .	521	73.1	70.1	88.6	80.3	2.9
Nonmetropolitan statistical area . . . . .	66	26.9	29.9	11.4	93.1	3.7
Growth area <sup>2</sup>						
Below 7.8% growth . . . . .	209	43.3	46.1	29.3	89.0	3.5
Above 7.8% growth . . . . .	378	56.7	53.9	70.7	80.0	3.4
Poverty status of area <sup>2</sup>						
Below 13.1% in poverty . . . . .	337	51.9	52.1	51.3	83.9	3.1
Above 13.1% in poverty . . . . .	250	48.1	47.9	48.7	83.5	4.2
Primary care shortage area <sup>2</sup>						
Nonshortage area . . . . .	99	22.5	24.3	13.7	90.1	5.0
Shortage area . . . . .	488	77.5	75.7	86.3	81.8	3.1

<sup>1</sup>Distribution between respondents and nonrespondents is significantly different ( $p < 0.05$ ).

<sup>2</sup>Based on the Area Resource File value for the county in which the facility is located. Growth is based on the population difference between 2006 and 1996. Poverty is based on the percentage of population below the poverty level. Shortage area includes full or partial shortage area for primary care physicians.

SOURCE: CDC/NCHS, National Survey of Ambulatory Surgery.

**Table 2. Number, percent distribution, and rate of ambulatory surgery visits and all-listed procedures, by facility characteristics and sex: United States, 2006**

Characteristic	Both sexes		Male		Female	
	Estimate	Standard error	Estimate	Standard error	Estimate	Standard error
	Number in thousands					
Total visits . . . . .	34,738	1,829	14,707	781	20,032	1,072
Facility type						
Hospital based . . . . .	19,869	880	8,491	395	11,379	518
Freestanding . . . . .	14,869	1,603	6,216	674	8,653	939
Region						
Northeast . . . . .	5,298	645	2,248	273	3,051	385
Midwest . . . . .	8,047	610	3,378	272	4,669	355
South . . . . .	15,931	1,540	6,749	656	9,182	897
West . . . . .	5,462	427	2,331	179	3,130	266
Metropolitan status						
Metropolitan statistical area . . . . .	29,715	1,943	12,566	825	17,149	1,138
Nonmetropolitan statistical area . . . . .	5,024	937	2,140	407	2,883	537
	Percent distribution					
Total visits . . . . .	100.0	...	100.0	...	100.0	...
Facility type						
Hospital based . . . . .	57.2	2.9	57.7	2.9	56.8	2.9
Freestanding . . . . .	42.8	2.9	42.3	2.9	43.2	2.9
Region						
Northeast . . . . .	15.3	1.7	15.3	1.7	15.2	1.8
Midwest . . . . .	23.2	1.8	23.0	1.8	23.3	1.8
South . . . . .	45.9	2.7	45.9	2.8	45.8	2.8
West . . . . .	15.7	1.3	15.9	1.3	15.6	1.4
Metropolitan status						
Metropolitan statistical area . . . . .	85.5	2.7	85.4	2.8	85.6	2.7
Nonmetropolitan statistical area . . . . .	14.5	2.7	14.6	2.8	14.4	2.7
	Rate per 1,000 population <sup>1</sup>					
Total visits . . . . .	116.5	6.1	100.4	5.3	132.0	7.1
Facility type						
Hospital based . . . . .	66.6	3.0	58.0	2.7	75.0	3.4
Freestanding . . . . .	49.9	5.4	42.4	4.6	57.0	6.2
Region						
Northeast . . . . .	96.9	11.8	84.6	10.3	108.5	13.7
Midwest . . . . .	121.7	9.2	103.8	8.3	139.0	10.6
South . . . . .	147.0	14.2	127.3	12.4	165.7	16.2
West . . . . .	79.2	6.2	67.8	5.2	90.5	7.7
Metropolitan status						
Metropolitan statistical area . . . . .	119.3	7.8	102.7	6.7	135.5	9.0
Nonmetropolitan statistical area . . . . .	99.6	18.6	85.3	16.2	113.8	21.2

See footnotes at end of table.

**Table 2. Number, percent distribution, and rate of ambulatory surgery visits and all-listed procedures, by facility characteristics and sex: United States, 2006—Con.**

Characteristic	Both sexes		Male		Female	
	Estimate	Standard error	Estimate	Standard error	Estimate	Standard error
Number in thousands						
Total procedures . . . . .	53,329	2,654	22,681	1,138	30,648	1,575
Facility type						
Hospital based . . . . .	30,761	1,276	13,286	593	17,475	751
Freestanding . . . . .	22,568	2,328	9,395	971	13,173	1,385
Region						
Northeast . . . . .	8,018	898	3,486	392	4,532	530
Midwest . . . . .	12,575	904	5,321	412	7,254	532
South . . . . .	24,023	2,224	10,143	939	13,879	1,316
West . . . . .	8,713	690	3,730	299	4,983	430
Metropolitan status						
Metropolitan statistical area . . . . .	45,691	2,853	19,399	1,213	26,292	1,686
Nonmetropolitan statistical area . . . . .	7,638	1,387	3,282	613	4,356	791
Percent distribution						
Total procedures . . . . .	100.0	...	100.0	...	100.0	...
Facility type						
Hospital based . . . . .	57.7	2.7	58.6	2.7	57.0	2.8
Freestanding . . . . .	42.3	2.7	41.4	2.7	43.0	2.8
Region						
Northeast . . . . .	15.0	1.6	15.4	1.6	14.8	1.6
Midwest . . . . .	23.6	1.7	23.5	1.8	23.7	1.8
South . . . . .	45.0	2.6	44.7	2.6	45.3	2.7
West . . . . .	16.3	1.3	16.4	1.4	16.3	1.4
Metropolitan status						
Metropolitan statistical area . . . . .	85.7	2.6	85.5	2.7	85.8	2.6
Nonmetropolitan statistical area . . . . .	14.3	2.6	14.5	2.7	14.2	2.6
Rate per 1,000 population <sup>1</sup>						
Total procedures . . . . .	178.8	8.9	154.8	7.8	202.0	10.4
Facility type						
Hospital based . . . . .	101.3	4.3	89.4	4.0	112.7	4.9
Freestanding . . . . .	77.5	7.8	65.4	6.6	89.3	9.1
Region						
Northeast . . . . .	146.6	16.4	131.3	14.7	161.1	18.8
Midwest . . . . .	190.2	13.7	163.5	12.7	215.9	15.8
South . . . . .	221.6	20.5	191.3	17.7	250.5	23.8
West . . . . .	126.3	10.0	108.4	8.7	144.0	12.4
Metropolitan status						
Metropolitan statistical area . . . . .	183.5	11.5	158.5	9.9	207.7	13.3
Nonmetropolitan statistical area . . . . .	151.5	27.5	130.8	24.4	172.0	31.2

... Category not applicable.

<sup>1</sup>Rates were calculated using U.S. Census Bureau 2000-based postcensal estimates of the civilian population as of July 1, 2006.

SOURCE: CDC/NCHS, National Survey of Ambulatory Surgery.

**Table 3. Number of ambulatory surgery visits by disposition and principal expected source of payment: United States, 2006**

Characteristic	Estimate	Standard error	Percent distribution	Standard error
Number in thousands				
All visits . . . . .	34,738	1,829	100	. . .
Disposition of patient				
Routine <sup>1</sup> . . . . .	32,356	1,792	93.1	0.9
Observation status . . . . .	401	66	1.2	0.2
Inpatient admission . . . . .	287	43	0.8	0.1
Surgery cancelled . . . . .	79	19	0.2	0.1
Not stated . . . . .	944	174	2.7	0.5
Other . . . . .	*	*	*	*
Principal expected source of payment				
Private insurance . . . . .	18,070	1,045	53.0	1.2
Medicare . . . . .	10,996	660	32.2	0.9
Medicaid . . . . .	2,204	189	6.5	0.5
Workers compensation . . . . .	627	101	1.8	0.3
Other government insurance . . . . .	309	63	0.9	0.2
Self pay . . . . .	1,131	185	3.3	0.5
Other . . . . .	783	170	2.3	0.5

. . . Category not applicable.

\* Figure does not meet standards of reliability or precision.

<sup>1</sup>Patients with routine disposition were those who were discharged to their normal place of residence, i.e., home, nursing home, or prison.

SOURCE: CDC/NCHS, National Survey of Ambulatory Surgery.

**Table 4. Distribution of times for surgical visits by ambulatory surgery facility type: United States, 2006**

Calculated time in minutes	Mean	Standard error	25th percentile	Median	75th percentile
Total					
Total <sup>1</sup> . . . . .	124.5	3.6	65	100	153
Operating room <sup>2</sup> . . . . .	53.7	1.4	25	40	65
Surgical <sup>3</sup> . . . . .	30.3	0.8	11	20	36
Postoperative room <sup>4</sup> . . . . .	66.9	2.0	32	51	81
Hospital based					
Total <sup>1</sup> . . . . .	146.6	5.3	84	120	177
Operating room <sup>2</sup> . . . . .	61.7	1.6	33	50	75
Surgical <sup>3</sup> . . . . .	34.2	0.9	13	24	43
Postoperative room <sup>4</sup> . . . . .	79.0	3.2	25	39	60
Freestanding					
Total <sup>1</sup> . . . . .	97.7	3.8	53	76	120
Operating room <sup>2</sup> . . . . .	43.2	2.0	20	30	50
Surgical <sup>3</sup> . . . . .	25.1	1.4	9	15	27
Postoperative room <sup>4</sup> . . . . .	53.1	2.3	29	43	66

<sup>1</sup>Total time was calculated by subtracting the time when the patient entered the operating room from the time the patient left postoperative care.

<sup>2</sup>Operating room time was calculated by subtracting the time when the patient entered the operating room from the time the patient left the operating room.

<sup>3</sup>Surgical time was calculated by subtracting the time the surgery began from the time the surgery ended. Surgical time typically extends from when the first incision is made until the wound is closed.

<sup>4</sup>Postoperative room time was calculated by subtracting the time when the patient entered postoperative care from the time the patient left postoperative care.

SOURCE: CDC/NCHS, National Survey of Ambulatory Surgery.

**Table 5. Average surgical duration by selected diagnoses and ambulatory surgery facility type: United States, 2006**

Selected diagnoses and ICD–9–CM codes	Average total time (in minutes) <sup>1</sup>	Standard error	Average surgical time (in minutes) <sup>2</sup>	Standard error
Total				
Cataract . . . . .	.366 70.2	2.7	18.1	0.7
Benign neoplasm of the colon . . . . .	.211.3 90.3	4.1	21.8	0.7
Diverticula of the intestine . . . . .	.562 79.5	4.2	16.9	0.7
Intervertebral disc disorders . . . . .	.722 82.9	7.2	21.1	3.0
Hemorrhoids . . . . .	.455 86.7	4.0	18.2	0.9
Gastritis and duodenitis . . . . .	.535 91.0	6.5	14.2	1.3
Chronic diseases of tonsils and adenoids . . . . .	.474 155.2	7.9	22.5	1.0
Otitis media and Eustachian tube disorders . . . . .	.381–382 65.7	5.1	12.3	1.0
Carpal tunnel syndrome . . . . .	.354.0 96.0	3.6	18.2	0.9
Inguinal hernia . . . . .	.550 169.0	6.4	49.4	1.6
Hospital based				
Cataract . . . . .	.366 88.4	3.7	22.7	1.5
Benign neoplasm of the colon . . . . .	.211.3 111.5	7.5	24.6	1.4
Diverticula of the intestine . . . . .	.562 102.7	5.0	19.0	1.7
Intervertebral disc disorders . . . . .	.722 107.4	14.8	29.9	5.4
Hemorrhoids . . . . .	.455 112.0	6.6	20.7	1.3
Gastritis and duodenitis . . . . .	.535 111.4	7.8	17.9	1.7
Chronic diseases of tonsils and adenoids . . . . .	.474 161.6	11.0	23.4	1.5
Otitis media and Eustachian tube disorders . . . . .	.381–382 75.0	4.9	13.5	1.4
Carpal tunnel syndrome . . . . .	.354.0 111.2	5.6	19.1	1.1
Inguinal hernia . . . . .	.550 177.2	7.2	52.0	1.8
Freestanding				
Cataract . . . . .	.366 57.3	2.4	14.9	0.5
Benign neoplasm of the colon . . . . .	.211.3 77.9	3.0	20.0	0.7
Diverticula of the intestine . . . . .	.562 68.3	4.0	15.9	0.7
Intervertebral disc disorders . . . . .	.722 61.4	5.3	12.8	2.2
Hemorrhoids . . . . .	.455 75.1	4.0	16.9	1.3
Gastritis and duodenitis . . . . .	.535 68.9	6.6	10.0	1.0
Chronic diseases of tonsils and adenoids . . . . .	.474 148.9	10.2	20.6	0.9
Otitis media and Eustachian tube disorders . . . . .	.381–382 56.8	5.8	10.2	0.6
Carpal tunnel syndrome . . . . .	.354.0 83.8	3.2	17.1	1.3
Inguinal hernia . . . . .	.550 145.8	7.7	40.1	2.3

<sup>1</sup>Total time was calculated by subtracting the time when the patient entered the operating room from the time the patient left postoperative care.

<sup>2</sup>Surgical time was calculated by subtracting the time the surgery began from the time the surgery ended. Surgical time typically extends from when the first incision is made until the wound is closed.

NOTE: Procedure categories and code numbers are based on the *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD–9–CM).

SOURCE: CDC/NCHS, National Survey of Ambulatory Surgery.

Table 6. Number of ambulatory surgery procedures, by procedure category, sex, and age: United States, 2006

Procedure category and ICD-9-CM code	Total	Sex		Age				
		Male	Female	Under 15 years	15-44 years	45-64 years	65-74 years	75 years and over
Number in thousands								
All procedures . . . . .	53,329	22,681	30,648	3,266	12,780	20,167	9,182	7,934
Operations on the nervous system . . . . .01-05	3,198	1,272	1,926	*	888	1,385	427	484
Injection of agent into spinal canal . . . . .03.91-03.92	1,991	844	1,147	*	533	835	286	336
Release of carpal tunnel . . . . .04.43	577	179	398	*	143	279	73	81
Operations on the eye . . . . .08-16	7,085	2,803	4,283	103	266	1,651	2,289	2,775
Operations on eyelids . . . . .08	386	137	249	*29	39	156	75	87
Extraction of lens . . . . .13.1-13.6	3,058	1,154	1,904	*	38	610	1,070	1,335
Insertion of prosthetic lens (pseudophakos) . . . . .13.7	2,582	987	1,595	*	33	524	923	1,098
Operations on the ear . . . . .18-20	1,114	568	545	858	118	59	*38	41
Myringotomy with insertion of tube . . . . .20.01	715	382	333	667	*32	*	*	*
Operations on the nose, mouth, and pharynx . . . . .21-29	2,864	1,441	1,423	1,050	937	617	162	97
Incision, excision, and destruction of nose . . . . .21.1,21.3-21.4,21.6	293	142	151	*	144	77	*34	*18
Turbinectomy . . . . .21.6	196	100	96	*	110	54	*	*
Repair and plastic operations on the nose . . . . .21.8	308	160	147	*	153	100	*27	*
Operations on nasal sinuses . . . . .22	606	328	278	*	222	276	*	*
Tonsillectomy with or without adenoidectomy . . . . .28.2-28.3	737	314	423	530	186	*	*	-
Adenoidectomy without tonsillectomy . . . . .28.6	140	83	57	132	*	*	-	-
Operations on the respiratory system . . . . .30-34	445	225	220	*34	70	176	88	*77
Bronchoscopy with or without biopsy . . . . .33.21-33.24,33.27	173	71	102	*	*	*67	*43	*
Operations on the cardiovascular system . . . . .35-39,00.50-00.51,00.53-00.55,00.61-00.66	1,376	712	664	*	165	605	284	312
Cardiac catheterization . . . . .37.21-37.23	492	280	212	*	*41	238	123	88
Operations on the digestive system . . . . .42-54	14,414	6,500	7,914	*	2,824	6,448	2,925	1,956
Dilation of esophagus . . . . .42.92	341	140	201	*	*37	152	83	66
Endoscopy of small intestine with or without biopsy . . . . .45.11-45.14,45.16	3,467	1,423	2,044	*	770	1,390	648	550
Endoscopy of large intestine with or without biopsy . . . . .45.21-45.25	5,741	2,438	3,304	*	779	2,921	1,233	778
Endoscopic polypectomy of large intestine . . . . .45.42	1,399	788	611	*	69	701	424	207
Laparoscopic cholecystectomy . . . . .51.23	503	87	416	*	229	193	*	*
Hernia repair . . . . .53.0-53.1,53.2-53.9	920	724	196	73	298	331	133	84
Repair of inguinal hernia . . . . .53.0-53.1	526	482	*45	39	139	186	88	74
Operations on the urinary system . . . . .55-59	1,776	932	844	*	375	624	369	356
Cystoscopy with or without biopsy . . . . .57.31-57.33	751	406	345	*	147	271	157	169
Operations on the male genital organs . . . . .60-64	631	631	...	166	146	143	109	67
Operations on the female genital organs . . . . .65-71	2,497	...	2,497	*	1,633	689	109	*60
Hysteroscopy . . . . .68.12	313	...	313	-	159	121	*	*
Dilation and curettage of uterus . . . . .69.0	611	...	611	-	334	227	*29	*
Operations on the musculoskeletal system . . . . .76-84,00.70-00.73,00.80-00.84	7,944	3,856	4,088	295	2,602	3,696	871	479
Partial excision of bone . . . . .76.2-76.3,77.6-77.8	449	231	218	*	121	228	57	*31
Reduction of fracture . . . . .76.7,79.0-79.3	495	310	185	102	213	115	*35	*29
Injection of therapeutic substance into joint or ligament . . . . .76.96,81.92	212	87	131	*	45	112	32	*26
Removal of implanted devices from bone . . . . .76.97,78.6	212	108	104	27	85	58	*	*
Excision and repair of bunion and other toe deformities . . . . .77.5	461	68	394	*	115	226	83	*30
Arthroscopy of knee . . . . .80.26	956	502	455	*	358	448	103	*32
Excision of semilunar cartilage of knee . . . . .80.6	690	384	307	*	204	352	90	*42
Replacement or other repair of knee . . . . .81.42-81.47,81.54-81.55,00.80-00.84	463	260	203	*	216	190	*35	*
Operations on muscle, tendon, fascia, and bursa . . . . .82-83	1,465	642	823	55	403	755	165	88

See footnotes at end of table.

Table 6. Number of ambulatory surgery procedures, by procedure category, sex, and age: United States, 2006—Con.

Procedure category and ICD-9-CM code	Total	Sex		Age				
		Male	Female	Under 15 years	15-44 years	45-64 years	65-74 years	75 years and over
Number in thousands								
Operations on the integumentary system . . . . .	3,581	1,045	2,535	166	1,223	1,415	435	341
Biopsy of breast . . . . .	261	*	250	*	79	130	*28	*
Local excision of lesion of breast (lumpectomy) . . . . .	329	*	317	*	110	133	*52	*
Excision or destruction of lesion or tissue of skin and subcutaneous tissue . . . . .	1,092	542	550	100	332	395	139	127
Miscellaneous diagnostic and therapeutic procedures and new technologies <sup>1</sup> . . . . .	6,060	2,617	3,442	242	1,456	2,517	999	846
Arteriography and angiocardiology using contrast material . . . . .	1,054	561	492	-	*74	471	297	213
Diagnostic ultrasound . . . . .	322	159	162	*	53	147	70	50
Injection or infusion of therapeutic or prophylactic substance . . . . .	1,462	529	933	35	429	599	202	196
Operations on the endocrine system, operations on the hemic and lymphatic system, and obstetrical procedures . . . . .	344	78	266	*	77	140	*78	*41

\* Figure does not meet standards of reliability or precision.

. . . Category not applicable.

- Quantity zero.

<sup>1</sup>Chapter 00 codes included in this category: 00.01-00.03, 00.09, 00.10-00.18, 00.21-00.25, 00.28-00.29, 00.31-00.35, 00.39, 00.40-00.43, 00.45-00.48, 00.52, 00.74-00.76, and 00.91-00.93.

NOTES: Procedure categories and code numbers are based on the *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM). The standard error (SE) of an estimate can be obtained by multiplying the estimate by the corresponding relative standard error (RSE). The RSE can be obtained by dividing the SE of the rate by the rate in Table 7.

SOURCE: CDC/NCHS, National Survey of Ambulatory Surgery.

Table 7. Rate and standard error for the rate of ambulatory surgery procedures, by procedure category, sex, and age: United States, 2006

Procedure category and ICD-9-CM code	Total	Sex		Age				
		Male	Female	Under 15 years	15-44 years	45-64 years	65-74 years	75 years and over
		Rate per 10,000 population <sup>1</sup>						
All procedures . . . . .	1,788.3	1,548.1	2,020.2	537.5	1,019.2	2,695.9	4,854.0	4,325.3
Operations on the nervous system . . . . .01-05	107.2	86.9	126.9	*	70.8	185.2	225.7	263.8
Injection of agent into spinal canal . . . . .03.91-03.92	66.8	57.6	75.6	*	42.5	111.6	151.3	183.4
Release of carpal tunnel . . . . .04.43	19.3	12.2	26.2	*	11.4	37.3	38.7	44.2
Operations on the eye . . . . .08-16	237.6	191.3	282.3	17.0	21.2	220.8	1,210.0	1,513.0
Operations on eyelids . . . . .08	12.9	9.4	16.4	*4.7	3.1	20.9	39.6	47.5
Extraction of lens . . . . .13.1-13.6	102.5	78.8	125.5	*	3.0	81.6	565.7	727.6
Insertion of prosthetic lens (pseudophakos) . . . . .13.7	86.6	67.4	105.2	*	2.6	70.1	488.2	598.7
Operations on the ear . . . . .18-20	37.3	38.8	35.9	141.2	9.4	7.9	*20.2	22.3
Myringotomy with insertion of tube . . . . .20.01	24.0	26.1	21.9	109.7	*2.6	*	*	*
Operations on the nose, mouth, and pharynx . . . . .21-29	96.0	98.3	93.8	172.9	74.7	82.5	85.8	53.1
Incision, excision, and destruction of nose . . . . .21.1,21.3-21.4,21.6	9.8	9.7	9.9	*	11.5	10.3	*18.1	*9.6
Turbinectomy . . . . .21.6	6.6	6.8	6.4	*	8.8	7.2	*	*
Repair and plastic operations on the nose . . . . .21.8	10.3	11.0	9.7	*	12.2	13.3	*14.4	*
Operations on nasal sinuses . . . . .22	20.3	22.4	18.3	*	17.7	36.9	*	*
Tonsillectomy with or without adenoidectomy . . . . .28.2-28.3	24.7	21.4	27.9	87.2	14.9	*	*	-
Adenoidectomy without tonsillectomy . . . . .28.6	4.7	5.6	3.8	21.8	*	*	-	-
Operations on the respiratory system . . . . .30-34	14.9	15.4	14.5	*5.6	5.6	23.6	46.3	*42.1
Bronchoscopy with or without biopsy . . . . .33.21-33.24,33.27	5.8	4.8	6.8	*	*	*9.0	*22.7	*
Operations on the cardiovascular system . . . . .35-39,00.50-00.51,00.53-00.55,00.61-00.66	46.1	48.6	43.8	*	13.2	80.9	150.0	169.9
Cardiac catheterization . . . . .37.21-37.23	16.5	19.1	14.0	*	*3.2	31.9	65.0	48.0
Operations on the digestive system . . . . .42-54	483.3	443.7	521.7	*	225.2	861.9	1,546.3	1,066.2
Dilation of esophagus . . . . .42.92	11.4	9.6	13.2	*	*3.0	20.4	43.7	35.8
Endoscopy of small intestine with or without biopsy . . . . .45.11-45.14,45.16	116.3	97.1	134.7	*	61.4	185.9	342.6	299.6
Endoscopy of large intestine with or without biopsy . . . . .45.21-45.25	192.5	166.4	217.8	*	62.1	390.4	651.6	424.3
Endoscopic polypectomy of large intestine . . . . .45.42	46.9	53.8	40.3	*	5.5	93.7	223.9	112.6
Laparoscopic cholecystectomy . . . . .51.23	16.9	5.9	27.4	*	18.2	25.9	*	*
Hernia repair . . . . .53.0-53.1,53.2-53.9	30.9	49.4	12.9	11.9	23.8	44.3	70.6	46.0
Repair of inguinal hernia . . . . .53.0-53.1	17.7	32.9	*2.9	6.5	11.1	24.9	46.6	40.2
Operations on the urinary system . . . . .55-59	59.6	63.6	55.7	*	29.9	83.5	195.3	194.1
Cystoscopy with or without biopsy . . . . .57.31-57.33	25.2	27.7	22.7	*	11.7	36.2	83.1	92.2
Operations on the male genital organs . . . . .60-64	21.2	43.1	...	27.4	11.6	19.2	57.4	36.7
Operations on the female genital organs . . . . .65-71	83.7	...	164.6	*	130.2	92.1	57.4	*32.7
Hysteroscopy . . . . .68.12	10.5	...	20.7	-	12.7	16.2	*	*
Dilation and curettage of uterus . . . . .69.0	20.5	...	40.2	-	26.7	30.3	*15.4	*
Operations on the musculoskeletal system . . . . .76-84,00.70-00.73,00.80-00.84	266.4	263.2	269.5	48.6	207.5	494.1	460.5	261.3
Partial excision of bone . . . . .76.2-76.3,77.6-77.8	15.1	15.8	14.4	*	9.6	30.5	29.9	*17.0
Reduction of fracture . . . . .76.7,79.0-79.3	16.6	21.2	12.2	16.8	17.0	15.4	*18.5	*16.0
Injection of therapeutic substance into joint or ligament . . . . .76.96,81.92	7.3	5.9	8.6	*	3.6	14.9	16.9	*14.2
Removal of implanted devices from bone . . . . .76.97,78.6	7.1	7.3	6.9	4.4	6.8	7.7	*	*
Excision and repair of bunion and other toe deformities . . . . .77.5	15.5	4.6	26.0	*	9.1	30.3	44.1	*16.5
Arthroscopy of knee . . . . .80.26	32.1	34.2	30.0	*	28.5	59.9	54.3	*17.7
Excision of semilunar cartilage of knee . . . . .80.6	23.1	26.2	20.2	*	16.3	47.1	47.8	*22.8
Replacement or other repair of knee . . . . .81.42-81.47,81.54-81.55,00.80-00.84	15.5	17.7	13.4	*	17.2	25.4	*18.6	*
Operations on muscle, tendon, fascia, and bursa . . . . .82-83	49.1	43.8	54.2	9.0	32.1	100.9	87.3	47.8

See footnotes at end of table.

Table 7. Rate and standard error for the rate of ambulatory surgery procedures, by procedure category, sex, and age: United States, 2006—Con.

Procedure category and ICD-9-CM code	Total	Sex		Age				
		Male	Female	Under 15 years	15-44 years	45-64 years	65-74 years	75 years and over
		Rate per 10,000 population <sup>1</sup>						
Operations on the integumentary system . . . . .	120.1	71.3	167.1	27.3	97.5	189.2	229.9	186.1
Biopsy of breast . . . . .	8.8	*	16.5	*	6.3	17.4	*14.7	*
Local excision of lesion of breast (lumpectomy) . . . . .	11.0	*	20.9	*	8.8	17.8	*27.4	*
Excision or destruction of lesion or tissue of skin and subcutaneous tissue . . . . .	36.6	37.0	36.3	16.4	26.5	52.8	73.4	69.2
Miscellaneous diagnostic and therapeutic procedures and new technologies <sup>2</sup> . . . . .	203.2	178.6	226.9	39.8	116.1	336.4	528.1	461.4
Arteriography and angiocardiology using contrast material . . . . .	35.3	38.3	32.5	—	*5.9	62.9	156.8	116.0
Diagnostic ultrasound . . . . .	10.8	10.9	10.7	*	4.2	19.7	36.8	27.5
Injection or infusion of therapeutic or prophylactic substance . . . . .	49.0	36.1	61.5	5.7	34.2	80.1	107.0	107.0
Operations on the endocrine system, operations on the hemic and lymphatic system, and obstetrical procedures . . . . .	11.5	5.3	17.5	*	6.1	18.7	*41.2	*22.5
				Standard error				
All procedures . . . . .	89.00	77.65	103.83	72.44	57.38	148.54	286.03	231.38
Operations on the nervous system . . . . .	11.32	10.57	12.94	*	9.57	19.50	27.43	37.71
Injection of agent into spinal canal . . . . .	8.97	8.72	10.01	*	7.31	15.38	23.29	29.95
Release of carpal tunnel . . . . .	2.07	1.55	2.99	*	1.95	5.05	6.50	9.35
Operations on the eye . . . . .	21.50	16.25	27.63	3.06	3.11	21.09	142.35	134.99
Operations on eyelids . . . . .	1.36	1.33	1.95	*1.30	0.58	3.23	6.31	8.37
Extraction of lens . . . . .	10.02	7.09	13.29	*	0.54	9.41	67.74	67.42
Insertion of prosthetic lens (pseudophakos) . . . . .	9.02	6.28	12.08	*	0.49	8.58	63.85	57.88
Operations on the ear . . . . .	6.87	6.09	8.04	30.27	1.87	1.43	*5.08	6.62
Myringotomy with insertion of tube . . . . .	5.20	5.28	5.41	25.32	*0.73	*	*	*
Operations on the nose, mouth, and pharynx . . . . .	10.76	10.54	12.78	25.76	8.67	12.86	16.80	10.80
Incision, excision, and destruction of nose . . . . .	1.28	1.34	1.83	*	2.14	1.63	*4.72	*2.33
Turbinectomy . . . . .	0.95	1.14	1.23	*	1.45	1.35	*	*
Repair and plastic operations on the nose . . . . .	1.17	1.58	1.24	*	1.66	2.12	*3.82	*
Operations on nasal sinuses . . . . .	3.27	3.64	4.08	*	3.36	9.02	*	*
Tonsillectomy with or without adenoidectomy . . . . .	4.15	3.52	5.17	16.93	2.15	*	*	—
Adenoidectomy without tonsillectomy . . . . .	0.99	1.41	0.86	4.79	*	*	—	—
Operations on the respiratory system . . . . .	1.98	2.17	2.48	*1.45	1.31	4.51	9.96	*8.10
Bronchoscopy with or without biopsy . . . . .	0.97	0.78	1.63	*	*	*2.32	*6.07	*
Operations on the cardiovascular system . . . . .	5.69	6.51	5.44	*	2.05	11.89	23.17	24.91
Cardiac catheterization . . . . .	2.51	3.07	2.24	*	*0.84	5.78	12.17	11.18
Operations on the digestive system . . . . .	41.17	39.15	44.18	*	20.69	77.38	158.44	94.26
Dilation of esophagus . . . . .	1.63	1.55	2.14	*	*0.80	3.45	9.02	7.33
Endoscopy of small intestine with or without biopsy . . . . .	10.46	9.45	12.04	*	7.33	18.77	32.51	29.46
Endoscopy of large intestine with or without biopsy . . . . .	21.68	19.32	24.41	*	10.15	43.49	87.41	46.99
Endoscopic polypectomy of large intestine . . . . .	5.76	6.72	5.30	*	1.25	11.00	36.55	14.02
Laparoscopic cholecystectomy . . . . .	1.51	0.84	2.79	*	2.25	2.98	*	*
Hernia repair . . . . .	2.42	4.22	1.29	2.58	2.20	4.99	10.61	7.07
Repair of inguinal hernia . . . . .	1.48	2.87	*0.56	1.17	1.39	2.93	8.53	6.97
Operations on the urinary system . . . . .	4.82	5.39	5.38	*	3.99	9.10	24.40	20.98
Cystoscopy with or without biopsy . . . . .	2.95	3.40	3.05	*	2.29	4.82	12.46	12.97
Operations on the male genital organs . . . . .	1.87	3.81	...	5.07	1.35	3.06	8.85	6.77
Operations on the female genital organs . . . . .	7.20	...	14.15	*	11.67	9.85	11.27	*8.52
Hysteroscopy . . . . .	1.60	...	3.14	—	2.37	2.54	*	*
Dilation and curettage of uterus . . . . .	2.17	...	4.27	—	3.07	4.00	*3.48	*

See footnotes at end of table.

Table 7. Rate and standard error for the rate of ambulatory surgery procedures, by procedure category, sex, and age: United States, 2006—Con.

Procedure category and ICD-9-CM code	Total	Sex		Age				
		Male	Female	Under 15 years	15-44 years	45-64 years	65-74 years	75 years and over
				Standard error				
Operations on the musculoskeletal system . . . . .76-84,00.70-00.73,00.80-00.84	19.47	21.20	20.32	5.85	19.10	38.44	48.77	24.82
Partial excision of bone . . . . .76.2-76.3,77.6-77.8	1.45	1.92	1.59	*	1.33	3.98	5.48	*3.78
Reduction of fracture . . . . .76.7,79.0-79.3	1.68	2.44	1.37	2.21	2.28	2.67	*4.88	*3.33
Injection of therapeutic substance into joint or ligament . . . . .76.96,81.92	0.87	1.00	1.16	*	0.78	2.26	3.20	*3.27
Removal of implanted devices from bone . . . . .76.97,78.6	0.94	1.29	1.01	1.20	1.27	1.17	*	*
Excision and repair of bunion and other toe deformities . . . . .77.5	1.79	0.84	3.30	*	1.69	4.23	8.82	*4.01
Arthroscopy of knee. . . . .80.26	3.72	4.43	3.69	*	3.98	7.18	9.35	*4.45
Excision of semilunar cartilage of knee. . . . .80.6	1.99	2.86	1.80	*	1.88	4.51	6.94	*4.92
Replacement or other repair of knee . . . . .81.42-81.47,81.54-81.55,00.80-00.84	1.97	2.81	1.64	*	2.86	3.28	*3.95	*
Operations on muscle, tendon, fascia, and bursa . . . . .82-83	5.22	3.37	8.29	1.75	4.43	12.84	13.25	7.76
Operations on the integumentary system. . . . .85-86	8.53	6.42	13.24	3.92	9.50	14.66	20.62	19.98
Biopsy of breast . . . . .85.11-85.12	1.26	*	2.43	*	1.23	2.93	*3.56	*
Local excision of lesion of breast (lumpectomy). . . . .85.21	1.17	*	2.29	*	1.45	2.22	*6.37	*
Excision or destruction of lesion or tissue of skin and subcutaneous tissue . . . . .86.2-86.4	3.20	3.92	3.33	2.57	3.24	5.25	13.11	10.15
Miscellaneous diagnostic and therapeutic procedures and new technologies <sup>2</sup> . . . . .87-99,00	16.60	15.67	19.36	5.56	14.75	30.74	48.83	47.14
Arteriography and angiocardiology using contrast material. . . . .88.4-88.5	5.40	6.50	4.91	-	*1.61	10.60	27.50	25.38
Diagnostic ultrasound. . . . .88.7,00.21-00.25,00.28,00.29	1.76	1.79	2.12	*	0.95	3.86	8.70	6.49
Injection or infusion of therapeutic or prophylactic substance . . . . .99.1-99.2	7.20	4.86	10.46	1.09	7.30	13.78	16.48	13.21
Operations on the endocrine system, operations on the hemic and lymphatic system, and obstetrical procedures . . . . .06-07,40-41,72-75	1.16	0.77	1.98	*	1.07	2.53	*7.97	*5.08

\* Figure does not meet standards of reliability or precision.

- Quantity zero.

. . . Category not applicable.

<sup>1</sup>Rates were calculated using U.S. Census Bureau 2000-based postcensal estimates of the civilian population as of July 1, 2006.

<sup>2</sup>Chapter 00 codes included in this category: 00.01-00.03, 00.09, 00.10-00.18, 00.21-00.25, 00.28-00.29, 00.31-00.35, 00.39, 00.40-00.43, 00.45-00.48, 00.52, 00.74-00.76, 00.91-00.93.

NOTES: Procedure categories and code numbers are based on the *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM). The relative standard error (RSE) can be obtained by dividing the standard error (SE) of the rate by the rate. The SE of a number in Table 6 can be obtained by multiplying the RSE by the estimate.

SOURCE: CDC/NCHS, National Survey of Ambulatory Surgery.

Table 8. Number of ambulatory surgery visits by first-listed diagnosis, sex, and age: United States, 2006

Category of first-listed diagnosis and ICD-9-CM code	Total	Sex		Age				
		Male	Female	Under 15 years	15-44 years	45-64 years	65-74 years	75 years and over
Number in thousands								
All conditions . . . . .	34,738	14,707	20,032	2,471	8,351	12,948	5,887	5,081
Infectious and parasitic diseases . . . . .001-139	145	64	81	*	*	*42	*	*
Neoplasms . . . . .140-239	3,285	1,626	1,659	69	381	1,474	772	589
Malignant neoplasms . . . . .140-208,230-234	1,173	534	639	*	117	446	285	314
Malignant neoplasm of skin . . . . .172-173,176.0,198.2	303	164	139	*	34	87	59	123
Malignant neoplasm of breast . . . . .174-175,198.81	235	*	234	-	*35	121	*52	*
Benign neoplasms . . . . .210-229	2,000	1,039	961	53	241	985	468	253
Benign neoplasm of colon . . . . .211.3	1,389	785	604	-	90	730	380	189
Lipoma . . . . .214	126	61	64	*	*23	76	*	*
Endocrine, nutritional and metabolic diseases, and immunity disorders . . . . .240-279	266	74	192	*	91	103	*34	*
Diseases of the nervous system and sense organs . . . . .320-389	5,308	2,114	3,194	729	412	1,243	1,317	1,607
Carpal tunnel syndrome . . . . .354.0	552	171	381	-	138	263	66	86
Cataract . . . . .366	3,009	1,135	1,874	*	34	592	1,066	1,313
Disorders of the eyelid . . . . .373-374	174	71	103	*	*12	58	45	48
Otitis media and Eustachian tube disorders . . . . .381-382	623	324	299	577	*	*	*	*
Diseases of the circulatory system . . . . .390-459	1,736	832	904	*	256	860	353	264
Heart disease . . . . .391-392.0,393-398,402,404,410-416,420-429	540	318	222	*	*41	241	131	128
Hemorrhoids . . . . .455	715	287	427	*	151	411	108	*45
Diseases of the respiratory system . . . . .460-519	1,294	591	703	572	396	207	81	*38
Deviated nasal septum . . . . .470	134	77	57	*	75	42	*	*
Chronic sinusitis . . . . .473	141	82	59	*	52	56	*	*
Chronic disease of tonsils and adenoids . . . . .474	680	273	407	496	172	*	-	-
Diseases of the digestive system . . . . .520-579	6,808	3,081	3,727	326	1,597	2,688	1,242	955
Diseases of teeth and supporting structures . . . . .520-525	221	114	107	171	*	*	*	*
Diseases of esophagus . . . . .530	1,132	531	601	*	255	447	224	177
Gastritis and duodenitis . . . . .535	703	228	475	*	170	257	146	118
Hernia . . . . .550-553	1,141	764	377	64	335	418	174	149
Inguinal hernia . . . . .550	515	470	*45	33	131	189	91	71
Noninfectious enteritis and colitis . . . . .555-558	228	102	126	*	81	87	*34	*
Diverticula of intestine . . . . .562	1,135	513	622	*	*59	522	306	248
Cholelithiasis . . . . .574	376	*64	312	*	178	130	*	*
Diseases of the genitourinary system . . . . .580-629	2,932	847	2,085	115	1,143	1,050	358	267
Calculus of kidney and ureter . . . . .592	381	178	204	*	144	165	*40	*31
Benign mammary dysplasias . . . . .610	94	-	94	-	*35	*45	*	*
Lump or mass in breast . . . . .611.72	198	*	191	*	83	85	*	*
Disorders of menstruation and other abnormal vaginal bleeding . . . . .626,627.0-627.1	481	...	481	-	250	201	*	*
Complications of pregnancy, childbirth, and the puerperium . . . . .630-677	322	...	322	-	315	*	-	-
Abortion and ectopic and molar pregnancy . . . . .630-639	260	...	260	-	253	*	-	-
Diseases of the skin and subcutaneous tissue . . . . .680-709	631	292	339	56	224	233	*	49
Sebaceous cyst . . . . .706.2	134	69	65	*	*44	53	*	*
Diseases of the musculoskeletal system and connective tissue . . . . .710-739	4,523	1,875	2,648	67	1,336	2,035	599	486
Arthropathies and related disorders . . . . .710-719	809	378	431	*	276	378	89	52
Internal derangement of knee . . . . .717	321	177	144	*	116	150	*33	*
Intervertebral disc disorders . . . . .722	861	404	456	-	312	389	93	67
Lumbago . . . . .724.2	156	64	91	-	35	57	31	33
Rheumatism, excluding back . . . . .725-729	968	382	586	*26	287	484	114	57
Acquired deformities of toe . . . . .735	287	58	229	*	74	121	61	*28

See footnotes at end of table.

**Table 8. Number of ambulatory surgery visits by first-listed diagnosis, sex, and age: United States, 2006—Con.**

Category of first-listed diagnosis and ICD-9-CM code	Total	Sex		Age				
		Male	Female	Under 15 years	15-44 years	45-64 years	65-74 years	75 years and over
Congenital anomalies . . . . .740-759	479	184	*	132	126	*	*	*
Symptoms, signs, and ill-defined conditions. . . . .780-799	1,390	548	842	*	403	520	185	147
Abdominal pain . . . . .789.0	167	51	116	*	53	71	*	*
Injury and poisoning . . . . .800-999	2,230	1,255	976	169	777	848	270	166
Fractures . . . . .800-829	513	321	192	102	237	107	*32	*35
Current tear of medial cartilage or meniscus of knee . . . . .836.0	424	253	171	*	120	231	53	*20
Supplementary classifications . . . . .V01-V85	3,134	1,245	1,890	74	778	1,406	503	373
Visit for sterilization . . . . .V25.2	292	50	242	*	263	*	-	-
Diseases of the blood and blood-forming organs, mental disorders, and certain conditions originating in the perinatal period . . . . .280-289,290-319,760-779	255	80	174	*	*47	88	*47	*62
Anemias . . . . .280-285	189	*58	131	*	*	*61	*40	*62

\* Figure does not meet standards of reliability or precision.

- Quantity zero.

. . . Category not applicable.

NOTES: Diagnostic categories and code numbers are based on the *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM). The standard error (SE) of an estimate can be obtained by multiplying the estimate by the corresponding relative standard error (RSE). The RSE can be obtained by dividing the SE of the rate by the rate in Table 9.

SOURCE: CDC/NCHS, National Survey of Ambulatory Surgery.

Table 9. Rate and standard error for the rate of ambulatory surgery visits by first-listed diagnosis, sex, and age: United States, 2006

Category of first-listed diagnosis and ICD-9-CM code	Total	Sex		Age				
		Male	Female	Under 15 years	15-44 years	45-64 years	65-74 years	75 years and over
				Rate per 10,000 population <sup>1</sup>				
All conditions . . . . .	1,164.9	1,003.8	1,320.4	406.7	666.0	1,731.0	3,111.9	2,769.8
Infectious and parasitic diseases . . . . . 001-139	4.9	4.4	5.4	*	*	*5.6	*	*
Neoplasms . . . . . 140-239	110.2	111.0	109.4	11.4	30.4	197.0	408.2	320.9
Malignant neoplasms . . . . . 140-208,230-234	39.3	36.4	42.1	*	9.3	59.6	150.9	171.1
Malignant neoplasm of skin . . . . . 172-173,176.0,198.2	10.2	11.2	9.2	*	2.7	11.6	31.2	67.0
Malignant neoplasm of breast . . . . . 174-175,198.81	7.9	*	15.4	-	*2.8	16.1	*27.4	*
Benign neoplasms . . . . . 210-229	67.1	70.9	63.3	8.7	19.2	131.7	247.3	137.7
Benign neoplasm of colon . . . . . 211.3	46.6	53.6	39.8	-	7.1	97.6	200.9	103.1
Lipoma . . . . . 214	4.2	4.2	4.2	*	*1.8	10.2	*	*
Endocrine, nutritional and metabolic diseases, and immunity disorders . . . . . 240-279	8.9	5.1	12.7	*	7.3	13.8	*18.2	*
Diseases of the nervous system and sense organs . . . . . 320-389	178.0	144.3	210.5	120.1	32.8	166.1	696.1	876.3
Carpal tunnel syndrome . . . . . 354.0	18.5	11.7	25.1	-	11.0	35.1	35.1	46.6
Cataract . . . . . 366	100.9	77.5	123.5	*	2.7	79.2	563.7	715.6
Disorders of the eyelid . . . . . 373-374	5.8	4.8	6.8	*	*0.9	7.7	24.0	26.0
Otitis media and Eustachian tube disorders . . . . . 381-382	20.9	22.1	19.7	95.0	*	*	*	*
Diseases of the circulatory system . . . . . 390-459	58.2	56.8	59.6	*	20.4	115.0	186.8	144.1
Heart disease . . . . . 391-392.0,393-398,402,404,410-416,420-429	18.1	21.7	14.7	*	*3.2	32.2	69.2	69.7
Hemorrhoids . . . . . 455	24.0	19.6	28.2	*	12.0	54.9	57.1	*24.3
Diseases of the respiratory system . . . . . 460-519	43.4	40.3	46.3	94.2	31.5	27.7	42.6	*20.9
Deviated nasal septum . . . . . 470	4.5	5.3	3.8	*	6.0	5.6	*	*
Chronic sinusitis . . . . . 473	4.7	5.6	3.9	*	4.1	7.5	*	*
Chronic disease of tonsils and adenoids . . . . . 474	22.8	18.6	26.8	81.7	13.7	*	-	-
Diseases of the digestive system . . . . . 520-579	228.3	210.3	245.7	53.6	127.4	359.3	656.7	520.6
Diseases of teeth and supporting structures . . . . . 520-525	7.4	7.8	7.1	28.1	*	*	*	*
Diseases of esophagus . . . . . 530	37.9	36.2	39.6	*	20.3	59.8	118.2	96.5
Gastritis and duodenitis . . . . . 535	23.6	15.5	31.3	*	13.6	34.3	77.0	64.4
Hernia . . . . . 550-553	38.3	52.1	24.9	10.6	26.7	55.8	92.2	81.4
Inguinal hernia . . . . . 550	17.3	32.1	*3.0	5.4	10.5	25.3	48.0	38.9
Noninfectious enteritis and colitis . . . . . 555-558	7.6	6.9	8.3	*	6.4	11.7	*18.2	*
Diverticula of intestine . . . . . 562	38.1	35.0	41.0	*	*4.7	69.8	161.7	135.0
Cholelithiasis . . . . . 574	12.6	*4.4	20.6	*	14.2	17.4	*	*
Diseases of the genitourinary system . . . . . 580-629	98.3	57.8	137.4	18.9	91.1	140.4	189.1	145.5
Calculus of kidney and ureter . . . . . 592	12.8	12.1	13.4	*	11.5	22.0	*21.2	*16.8
Benign mammary dysplasias . . . . . 610	3.2	-	6.2	-	*2.8	*6.0	*	*
Lump or mass in breast . . . . . 611.72	6.6	*	12.6	*	6.6	11.4	*	*
Disorders of menstruation and other abnormal vaginal bleeding . . . . . 626,627.0-627.1	16.1	...	31.7	-	20.0	26.9	*	*
Complications of pregnancy, childbirth, and the puerperium . . . . . 630-677	10.8	...	21.2	-	25.1	*	-	-
Abortion and ectopic and molar pregnancy . . . . . 630-639	8.7	...	17.1	-	20.2	*	-	-
Diseases of the skin and subcutaneous tissue . . . . . 680-709	21.2	19.9	22.3	9.3	17.9	31.2	*	27.0
Sebaceous cyst . . . . . 706.2	4.5	4.7	4.3	*	*3.5	7.1	*	*
Diseases of the musculoskeletal system and connective tissue . . . . . 710-739	151.7	128.0	174.6	11.0	106.5	272.1	316.9	264.7
Arthropathies and related disorders . . . . . 710-719	27.1	25.8	28.4	*	22.0	50.6	46.9	28.3
Internal derangement of knee . . . . . 717	10.8	12.1	9.5	*	9.2	20.0	*17.2	*
Intervertebral disc disorders . . . . . 722	28.9	27.6	30.1	-	24.9	52.0	49.1	36.4
Lumbago . . . . . 724.2	5.2	4.4	6.0	-	2.8	7.6	16.6	17.8
Rheumatism, excluding back . . . . . 725-729	32.5	26.1	38.6	*4.2	22.9	64.7	60.5	31.1
Acquired deformities of toe . . . . . 735	9.6	3.9	15.1	*	5.9	16.2	32.2	*15.5

See footnotes at end of table.

Table 9. Rate and standard error for the rate of ambulatory surgery visits by first-listed diagnosis, sex, and age: United States, 2006—Con.

Category of first-listed diagnosis and ICD-9-CM code	Total	Sex		Age				
		Male	Female	Under 15 years	15-44 years	45-64 years	65-74 years	75 years and over
Rate per 10,000 population <sup>1</sup>								
Congenital anomalies . . . . .740-759	16.1	12.6	*	21.7	10.0	*	*	*
Symptoms, signs, and ill-defined conditions . . . . .780-799	46.6	37.4	55.5	*	32.2	69.5	97.7	80.3
Abdominal pain . . . . .789.0	5.6	3.5	7.7	*	4.2	9.4	*	*
Injury and poisoning . . . . .800-999	74.8	85.6	64.3	27.9	62.0	113.4	142.6	90.4
Fractures . . . . .800-829	17.2	21.9	12.7	16.8	18.9	14.3	*17.0	*19.1
Current tear of medial cartilage or meniscus of knee . . . . .836.0	14.2	17.3	11.3	*	9.5	30.9	28.0	*10.7
Supplementary classifications . . . . .V01-V85	105.1	84.9	124.6	12.2	62.1	187.9	265.9	203.4
Visit for sterilization . . . . .V25.2	9.8	3.4	16.0	*	20.9	*	-	-
Diseases of the blood and blood-forming organs, mental disorders, and certain conditions originating in the perinatal period . . . . .280-289,290-319,760-779	8.5	5.5	11.5	*	*3.8	11.8	*25.1	*33.8
Anemias . . . . .280-285	6.3	*4.0	8.6	*	*	*8.2	*21.1	*33.8
Standard error								
All conditions . . . . .	61.32	53.33	70.69	54.26	35.76	100.68	195.86	156.70
Infectious and parasitic diseases . . . . .001-139	0.90	0.85	1.24	*	*	*1.37	*	*
Neoplasms . . . . .140-239	7.96	8.89	7.90	1.94	2.75	16.81	39.52	25.97
Malignant neoplasms . . . . .140-208,230-234	2.76	3.20	3.01	*	1.22	5.11	15.04	18.58
Malignant neoplasm of skin . . . . .172-173,176.0,198.2	1.26	1.60	1.21	*	0.61	1.92	5.43	13.56
Malignant neoplasm of breast . . . . .174-175,198.81	0.77	*	1.52	-	*0.76	2.17	*5.07	*
Benign neoplasms . . . . .210-229	6.27	7.19	6.04	1.55	2.18	13.86	31.43	14.94
Benign neoplasm of colon . . . . .211.3	5.42	6.13	5.18	-	1.68	12.00	28.25	12.22
Lipoma . . . . .214	0.61	0.84	0.84	*	*0.46	1.93	*	*
Endocrine, nutritional and metabolic diseases, and immunity disorders . . . . .240-279	1.10	0.84	1.76	*	1.38	2.07	*4.00	*
Diseases of the nervous system and sense organs . . . . .320-389	13.69	10.58	17.50	22.75	3.62	13.98	75.05	75.91
Carpal tunnel syndrome . . . . .354.0	2.02	1.51	2.92	-	1.95	4.87	6.23	9.54
Cataract . . . . .366	9.90	6.98	13.19	*	0.50	9.24	67.68	66.28
Disorders of the eyelid . . . . .373-374	0.65	0.76	0.88	*	*0.25	1.34	4.50	4.36
Otitis media and Eustachian tube disorders . . . . .381-382	4.19	3.94	4.65	20.45	*	*	*	*
Diseases of the circulatory system . . . . .390-459	5.11	6.22	5.23	*	2.71	11.07	22.02	19.84
Heart disease . . . . .391-392.0,393-398,402,404,410-416,420-429	2.68	3.57	2.37	*	*0.86	5.61	12.87	13.80
Hemorrhoids . . . . .455	3.16	3.20	3.61	*	2.39	7.12	9.11	*5.26
Diseases of the respiratory system . . . . .460-519	5.73	5.15	6.92	20.07	3.55	4.41	7.87	*5.32
Deviated nasal septum . . . . .470	0.66	0.92	0.84	*	1.17	1.37	*	*
Chronic sinusitis . . . . .473	0.71	1.00	0.84	*	0.85	1.66	*	*
Chronic disease of tonsils and adenoids . . . . .474	4.48	3.48	5.71	18.27	2.03	*	-	-
Diseases of the digestive system . . . . .520-579	18.04	16.10	20.74	8.11	11.77	31.61	64.45	47.47
Diseases of teeth and supporting structures . . . . .520-525	1.21	1.38	1.35	4.99	*	*	*	*
Diseases of esophagus . . . . .530	4.31	4.28	4.86	*	2.81	7.88	17.63	12.02
Gastritis and duodenitis . . . . .535	3.12	2.19	4.38	*	2.43	4.92	13.40	11.48
Hernia . . . . .550-553	3.38	4.71	2.88	2.33	2.90	5.97	11.16	11.74
Inguinal hernia . . . . .550	1.58	3.09	*0.56	1.13	1.33	3.49	8.56	6.92
Noninfectious enteritis and colitis . . . . .555-558	1.42	1.38	2.11	*	1.68	2.28	*4.54	*
Diverticula of intestine . . . . .562	5.25	6.01	5.21	*	*1.03	12.67	22.33	19.19
Cholelithiasis . . . . .574	1.20	*0.71	2.22	*	1.98	2.42	*	*
Diseases of the genitourinary system . . . . .580-629	5.71	4.23	8.89	3.46	5.70	10.17	20.18	18.20
Calculus of kidney and ureter . . . . .592	1.32	1.54	1.60	*	1.95	2.73	*4.20	*4.63
Benign mammary dysplasias . . . . .610	0.61	-	1.21	-	*0.69	*1.48	*	*
Lump or mass in breast . . . . .611.72	1.07	*	2.04	*	1.22	2.57	*	*
Disorders of menstruation and other abnormal vaginal bleeding . . . . .626,627.0-627.1	1.90	...	3.73	-	2.59	3.25	*	*

See footnotes at end of table.

**Table 9. Rate and standard error for the rate of ambulatory surgery visits by first-listed diagnosis, sex, and age: United States, 2006—Con.**

Category of first-listed diagnosis and ICD-9-CM code	Total	Sex		Age				
		Male	Female	Under 15 years	15-44 years	45-64 years	65-74 years	75 years and over
				Standard error				
Complications of pregnancy, childbirth, and the puerperium . . . . .630-677	1.35	...	2.65	-	3.17	*	-	-
Abortion and ectopic and molar pregnancy . . . . .630-639	1.27	...	2.50	-	2.99	*	-	-
Diseases of the skin and subcutaneous tissue . . . . .680-709	3.02	3.02	4.06	2.04	2.41	7.03	*	5.30
Sebacaceous cyst . . . . .706.2	0.69	1.11	0.77	*	*0.77	1.44	*	*
Diseases of the musculoskeletal system and connective tissue . . . . .710-739	11.91	11.38	13.53	1.64	10.18	21.94	28.02	32.52
Arthropathies and related disorders . . . . .710-719	2.96	3.44	3.01	*	3.58	5.37	6.84	4.84
Internal derangement of knee . . . . .717	1.79	2.69	1.36	*	2.22	3.04	*4.09	*
Intervertebral disc disorders . . . . .722	4.49	4.23	5.10	-	5.40	7.26	9.32	6.28
Lumbago . . . . .724.2	0.93	0.95	1.18	-	0.80	1.51	4.55	4.40
Rheumatism, excluding back . . . . .725-729	2.26	2.23	3.08	*0.97	2.12	5.56	7.55	5.40
Acquired deformities of toe . . . . .735	1.35	0.81	2.21	*	1.21	2.78	8.32	*3.65
Congenital anomalies . . . . .740-759	4.79	2.66	*	3.51	2.75	*	*	*
Symptoms, signs, and ill-defined conditions . . . . .780-799	7.79	6.81	9.04	*	4.91	12.20	15.95	11.22
Abdominal pain . . . . .789.0	0.95	0.71	1.49	*	0.89	2.16	*	*
Injury and poisoning . . . . .800-999	5.15	6.22	5.27	3.51	5.05	8.65	20.49	11.84
Fractures . . . . .800-829	1.49	2.23	1.31	2.23	2.20	2.51	*4.74	*4.17
Current tear of medial cartilage or meniscus of knee . . . . .836.0	1.58	2.46	1.28	*	1.54	3.80	5.29	*2.77
Supplementary classifications . . . . .V01-V85	8.88	8.70	10.44	2.06	5.93	19.34	31.05	24.27
Visit for sterilization . . . . .V25.2	1.15	0.52	2.20	*	2.43	*	-	-
Diseases of the blood and blood-forming organs, mental disorders, and certain conditions originating in the perinatal period . . . . .280-289,290-319,760-779	1.19	1.12	1.71	*	*0.74	2.78	*6.55	*7.27
Anemias . . . . .280-285	1.01	*0.93	1.42	*	*	*2.09	*5.94	*7.27

\* Figure does not meet standards of reliability or precision.

- Quantity zero.

... Category not applicable.

<sup>1</sup>Rates were calculated using U.S. Census Bureau 2000-based postcensal estimates of the civilian population as of July 1, 2006.

NOTES: Diagnostic categories and code numbers are based on the *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM). The relative standard error (RSE) can be obtained by dividing the standard error (SE) of the rate by the rate. The SE of a number in Table 8 can be obtained by multiplying the RSE by the estimate.

SOURCE: CDC/NCHS, National Survey of Ambulatory Surgery.



E. MEDICAL INFORMATION																																				
<b>16. FINAL DIAGNOSES (including E-code diagnoses) – Narrative description</b>		Optional – ICD-9-CM Codes																																		
Principal Other/Additional	1.		•																																	
	2.		•																																	
	3.		•																																	
	4.		•																																	
	5.		•																																	
	6.		•																																	
	7.		•																																	
<b>17. Surgical and diagnostic procedures – Narrative description</b>		Optional – CPT-4 Codes	Optional – ICD-9-CM Codes																																	
Principal Other/Additional	1.		•																																	
	2.		•																																	
	3.		•																																	
	4.		•																																	
	5.		•																																	
	6.		•																																	
<input type="checkbox"/> None																																				
<b>18. Symptoms present during or after surgery. (Mark (X) all that apply)</b>																																				
<table style="width:100%; border: none;"> <tr> <td><input type="checkbox"/> Accidental laceration, puncture or perforation</td> <td><input type="checkbox"/> High blood pressure/hypertension</td> <td><input type="checkbox"/> None indicated</td> </tr> <tr> <td><input type="checkbox"/> Airway obstruction</td> <td><input type="checkbox"/> Hypoxia</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Apnea</td> <td><input type="checkbox"/> Incontinence</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Bleeding/hemorrhage</td> <td><input type="checkbox"/> Low blood pressure/hypotension</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Blood transfusion needed</td> <td><input type="checkbox"/> Malignant hyperthermia</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Cardiac arrest</td> <td><input type="checkbox"/> Nausea</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Difficulty waking up</td> <td><input type="checkbox"/> Peripheral site burn</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Dysrhythmia/arrhythmia</td> <td><input type="checkbox"/> Shock</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Embolism</td> <td><input type="checkbox"/> Vomiting</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Fainting/vascular/syncope</td> <td><input type="checkbox"/> Other – Please specify →</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Fistula</td> <td></td> <td></td> </tr> </table>				<input type="checkbox"/> Accidental laceration, puncture or perforation	<input type="checkbox"/> High blood pressure/hypertension	<input type="checkbox"/> None indicated	<input type="checkbox"/> Airway obstruction	<input type="checkbox"/> Hypoxia		<input type="checkbox"/> Apnea	<input type="checkbox"/> Incontinence		<input type="checkbox"/> Bleeding/hemorrhage	<input type="checkbox"/> Low blood pressure/hypotension		<input type="checkbox"/> Blood transfusion needed	<input type="checkbox"/> Malignant hyperthermia		<input type="checkbox"/> Cardiac arrest	<input type="checkbox"/> Nausea		<input type="checkbox"/> Difficulty waking up	<input type="checkbox"/> Peripheral site burn		<input type="checkbox"/> Dysrhythmia/arrhythmia	<input type="checkbox"/> Shock		<input type="checkbox"/> Embolism	<input type="checkbox"/> Vomiting		<input type="checkbox"/> Fainting/vascular/syncope	<input type="checkbox"/> Other – Please specify →		<input type="checkbox"/> Fistula		
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<input type="checkbox"/> Fainting/vascular/syncope	<input type="checkbox"/> Other – Please specify →																																			
<input type="checkbox"/> Fistula																																				
<b>F. FOLLOW-UP INFORMATION</b>																																				
		Yes	No	Unknown																																
<b>19a. Did someone attempt to follow-up with the patient within 24 hours after the surgery?</b>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																
<b>b. Did they reach the patient? If yes, →</b>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																
<b>(1) What was learned from this follow-up? (Mark (X) all that apply)</b>																																				
<table style="width:100%; border: none;"> <tr> <td><input type="checkbox"/> Patient had a question</td> <td><input type="checkbox"/> Called his/her doctor</td> <td><input type="checkbox"/> Went to an emergency department</td> </tr> <tr> <td><input type="checkbox"/> Patient had no problems</td> <td><input type="checkbox"/> Went to the doctor</td> <td><input type="checkbox"/> Was admitted to the hospital</td> </tr> <tr> <td><input type="checkbox"/> Patient had problem(s) and –</td> <td><input type="checkbox"/> Called the ambulatory surgery center</td> <td><input type="checkbox"/> Other – Please specify →</td> </tr> <tr> <td></td> <td><input type="checkbox"/> Came back to the ambulatory surgery center</td> <td></td> </tr> <tr> <td></td> <td><input type="checkbox"/> Called the emergency department</td> <td></td> </tr> </table>				<input type="checkbox"/> Patient had a question	<input type="checkbox"/> Called his/her doctor	<input type="checkbox"/> Went to an emergency department	<input type="checkbox"/> Patient had no problems	<input type="checkbox"/> Went to the doctor	<input type="checkbox"/> Was admitted to the hospital	<input type="checkbox"/> Patient had problem(s) and –	<input type="checkbox"/> Called the ambulatory surgery center	<input type="checkbox"/> Other – Please specify →		<input type="checkbox"/> Came back to the ambulatory surgery center			<input type="checkbox"/> Called the emergency department																			
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	<input type="checkbox"/> Came back to the ambulatory surgery center																																			
	<input type="checkbox"/> Called the emergency department																																			
<input type="checkbox"/> Nothing <input type="checkbox"/> Unknown																																				
<b>(2) What problem(s) did the patient mention (e.g., site drainage, temperature, pain, nausea)?</b>																																				
<b>20. Completed by</b>		<b>21. Date</b>	<b>OFFICE USE ONLY</b>	FR code																																

**Acknowledgments**

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