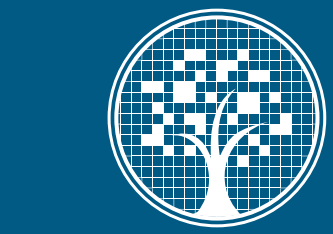

HEALTHCARE COST AND UTILIZATION PROJECT

HCUP Methods Series

Evaluation of the 1999 State Ambulatory Surgery Databases

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Agency for Healthcare Research and Quality

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Executive Summary

Overview

This report evaluates and compares the 1999 State Ambulatory Surgery Databases (SASD) with two other sources of ambulatory surgery data: (1) the 1999 American Hospital Association (AHA) Annual Survey; and (2) the 1999 Freestanding Outpatient Surgery Center (FOSC) database. The comparison is limited to the seven states that provided data for the 1999 Central Distributor (CD) SASD: Colorado, Florida, Maryland, New Jersey, New York, Utah, and Wisconsin.

The primary goal of this report is to determine the completeness of the data included in the CD SASD. Completeness is evaluated by comparing the CD SASD database to the facility-level data found in the two comparison databases (AHA and FOSC). Comparisons are made for number of facilities and numbers of discharges for the CD SASD, AHA and FOSC data. Particular attention is paid to the differing definitions of *freestanding facilities* across the two databases.

Key Findings

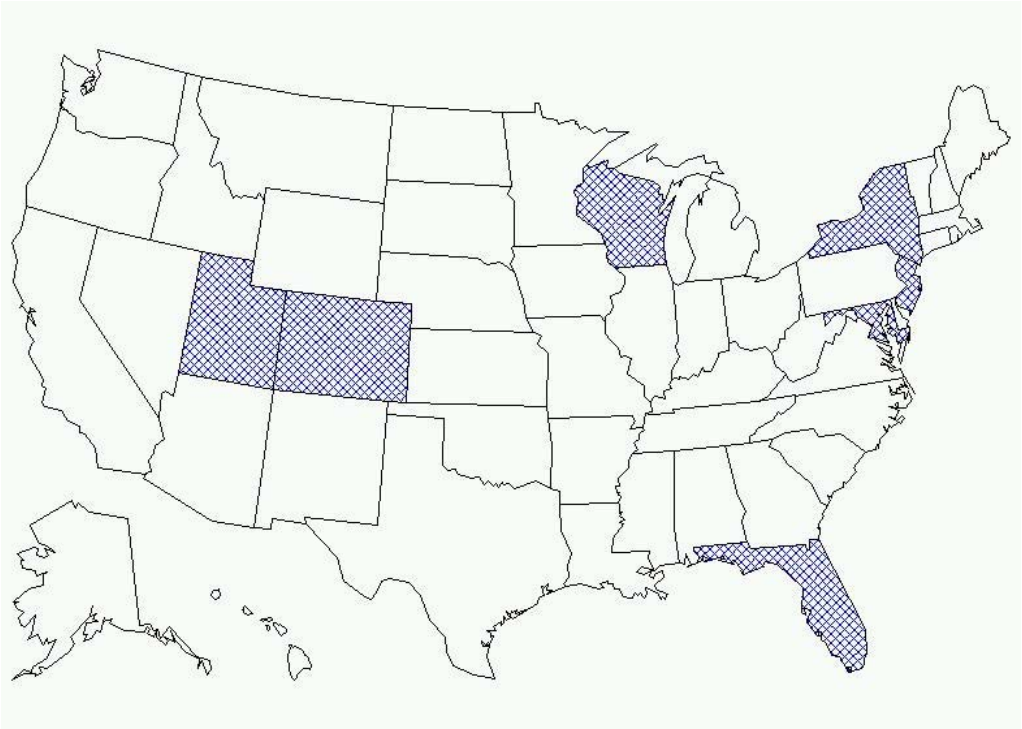
The 1999 CD SASD files contain 5,491,741 ambulatory surgery records from 1,187 facilities. At the facility level, the CD SASD's coverage varies across the states. In some states, the CD SASD mainly covers hospital-based facilities, while in other states the CD SASD reflects mostly freestanding facilities. For all states evaluated, the CD SASD appears to provide a complete and reliable count of surgery visits. The CD SASD can be very useful for state-level ambulatory surgery analyses.

INTRODUCTION

Ambulatory surgeries have become more numerous and more common over the past two decades. The National Center for Health Statistics (NCHS) shows that the number of ambulatory surgeries quadrupled between 1983 and 1996 to 21.2 million procedures. This growth was fueled by cost concerns and abetted by safety improvements, and new medical technologies that made ambulatory surgery more practical.

In 1997, the Healthcare Cost and Utilization Project (HCUP) began collecting ambulatory surgery data. Our objective is to evaluate the completeness of the seven 1999 State Ambulatory Surgery Databases (SASD) available through the AHRQ-sponsored Central Distributor. The seven states that provide these data are Colorado, Florida, Maryland, New Jersey, New York, Utah and Wisconsin.

Figure 1: HCUP States with SASD Databases



This report starts with an overview of the patient-level data that are presently available in the 1999 SASD. We then describe three sources of facility-level data. First, we describe data available from the 1999 American Hospital Association (AHA) Annual Survey. Second, we describe data available from the 1999 Provider of Service (POS) file maintained by the Centers for Medicare and Medicaid Studies (CMS). Third, we describe a database maintained by the SMG Marketing group that profiles freestanding ambulatory surgery centers in their 1999 Freestanding Outpatient Surgery Center (FOSC) database. Finally, we compare the counts of ambulatory surgery facilities and visits contained in the SASD to counts contained in the AHA file and in the FOSC database. We do not compare the SASD to the POS data because the POS do not contain service counts and are limited to Medicare-certified facilities.

SOURCES OF AMBULATORY SURGERY DATA

Visit Level Data

1999 HCUP State Ambulatory Surgery Databases (SASD)

Ambulatory surgery visit data were collected as part of HCUP beginning in 1997. For 1999, 7 standardized State Ambulatory Surgery Databases (SASD) were constructed and distributed for the following states:

- Colorado
- Florida (includes some freestanding facilities)
- Maryland
- New Jersey
- New York (includes some freestanding facilities)
- Utah (includes some freestanding facilities)
- Wisconsin (includes some freestanding facilities)

The 1999 SASD files contained all of the ambulatory surgery records provided to the HCUP project. The types of facilities contained in the SASD databases varied across the 7 states. All states supplied ambulatory surgery records from hospital-based and hospital-affiliated ambulatory surgery centers. Some states, but not all, also supplied ambulatory surgery records from freestanding facilities. The SASD files are available to researchers for a fee through the AHRQ-sponsored HCUP Central Distributor. Each state determines and sets the cost and criteria for availability of its data files. Complete and detailed information is available on the HCUP User Support Website (http://www.hcupdoc.net).

Facility Level Data

We used facility-level data to benchmark the SASD files. Three possible sources of facility information were identified: the HCFA POS File, the AHA Annual Survey, and the SMG FOSC file. Each database covers a slightly different set of facilities as shown in Table 1 below.

Table 1: Comparison of Ambulatory Surgery Provider Information Sources

Type of Facility	SMG	POS	AHA
AS facility – hospital-based and controlled	No	Yes*	Yes
AS facility – hospital-based, third party control	Yes	Yes*	Yes
AS facility – freestanding, hospital affiliation	Yes	Yes*	Yes
AS facility – freestanding with no hospital affiliation	Yes	Yes*	No
Services originating at other sites such as physician offices	No	Yes*	No

** Note: Coverage is limited to providers reimbursed for Medicare covered services.*

Hospital-based facilities are physically connected to main hospital facilities. All other facilities are considered freestanding. Facilities in both settings may be run either by a hospital or by a third party. The three data sources together cover the universe of ambulatory surgery facilities.

HCFA Provider of Services

The Provider of Services (POS) file lists facilities certified for Medicare participation. It contains facility name and location information and specifies the type of provider, but it does not contain any service count information. The POS is used for claim adjudication; reimbursements are made only to listed providers. Quarterly updates are available with little or no lag time.
While the POS lists providers of outpatient surgery in all settings, it is limited to Medicare participants. Consequently, it is not used as a data source in the comparisons that follow.

AHA Data

The AHA Annual Survey can identify hospital-associated ambulatory surgery facilities. These survey-based data include hospital descriptors and counts of outpatient surgeries. Annual updates generally are available toward the end of the year following the survey. AHA data exclude most freestanding outpatient surgery facilities.

SMG Freestanding Outpatient Surgery Center Data

This database is new to the HCUP project. Therefore, we describe it in more detail than the other facility level databases.

The SMG Marketing group profiles freestanding ambulatory surgery centers on an annual basis in their Freestanding Outpatient Surgery Center (FOSC) database. The SMG database encompasses 22 data tables in two Microsoft Access files: 1) the FOSC file, which contains current and historical operational statistics, and 2) the Health Facilities Master File (HFMF) file, which contains demographic information. The FOSC historical database covers the years 1989 through 1999.[1]
Table 2 lists the data tables contained in the two files.

SMG Freestanding Outpatient Surgery Center Universe

The SMG Marketing Group defines an outpatient surgery center as a facility or medical practice that is in business primarily to perform outpatient surgery. SMG selects facilities or practices that satisfy two criteria:

[1] Data obtained for this report also contained a small amount of 2000 data: 42 records.

Table 2: SMG Databases and Tables

	Database File	
	Freestanding Outpatient Surgery Center	**Health Facilities Master File**
Database Tables	• **FOSC Master** – summary information, including accreditation information • **Historical Data Layout** – surgery counts by year • **Surgical Specialties Volume** – surgery counts by specialty • **Surgical Specialties Description** – surgical specialty code descriptions • **Lap/Endo Procedure Volume** – laparoscopic/endoscopic counts by type • **Lap/Endo Procedure Description** – laparoscopic/endoscopic descriptions • **Laser Procedure Volume** – laser counts by type • **Laser Procedure Description** – laser type descriptions • **Personnel** – key facility personnel • **Personnel Description** – personnel title descriptions • **Chains** – for profit status and managed care contracting information	• **Facility Demographics** • **Comments** – facility specific comments • **ID Cross Reference** – alternate identification number(s) • **Relationships** – "parent-child" relationship information • **Facility Business Type** – type of business • **Retired Facility/Business Type** – business type information for closed facilities • **MSA** – MSA (Metropolitan Statistical Area) name and size • **County** – county name • **State** – state name • **Code** – code descriptions used throughout the database • **URL** – Facility Web Address

1. The center is licensed by the State, or Medicare certified as an Ambulatory Surgery Center – or – The center's primary business is to provide outpatient surgery. In the case of multi-specialty clinics, the center must perform a significant proportion of surgeries on an outpatient basis and must have a sterile operating room dedicated to outpatient surgery.

2. The facility must be freestanding. Though it may be on the same "campus" as a hospital, the facility cannot be physically connected (via hallway, corridor, tunnel, etc.) to the hospital – or – If the center is not freestanding (i.e., it is physically connected to a hospital), then the center must be owned or managed by a group other than the facility to which it is connected.

SMG Data Collection

SMG aims to accurately identify all but the most recently opened outpatient surgery centers. Data are collected through SMG Marketing Group's annual survey of freestanding outpatient surgery centers. SMG maintains a listing of freestanding outpatient surgery centers, which is updated regularly using four main data sources:

1. SMG's historical database, which contains information on freestanding outpatient surgery centers surveyed in past years.

2. Trade associations and accreditation organizations, which include the Federated Ambulatory Surgery Association (formerly the Freestanding Ambulatory Surgery Association) and the Accreditation Association for Ambulatory Health Care.

3. State departments of health (or other appropriate State agencies), which provide complete listings of licensed or operating freestanding outpatient surgery centers.

4. Freestanding outpatient surgery center chains, which include corporations that manage or own freestanding outpatient surgery centers.

All surgery center data are self reported by the facilities. Information is obtained directly from the surgery centers through the annual survey, which is mailed to all surgery centers. SMG compares new data with historical data for each facility and follows up by phone to resolve inconsistent information.

SMG Data Limitations

Self reported data invariably contain some errors on a survey of this size. SMG requests calendar year information, but some centers may report fiscal year information. Reporting dates vary among the facilities; therefore, information may be more up-to-date for some facilities than for others. Some centers may close or change their business orientation prior to the survey, which may cause data to be unavailable or inaccurate for the survey year. Some facilities refuse to participate in the survey. Finally, the FOSC database contains only summary data about facilities. It comprehensively describes the facility environment and aggregate surgery counts, including counts of laser and laparoscopic procedures, but it is not specific concerning other types of surgeries or the diagnoses leading to surgery.

SMG Data Completeness

While early years of the SMG data reflect low facility reporting rates, the rates are quite good for more recent years. In fact, facility reporting improved to over 98 percent in 1999.

COMPARISONS OF AMBULATORY SURGERY DATA

Differentiating between hospital-based outpatient surgery centers and freestanding facilities is not always straightforward. The AHA, SMG, and SASD have different definitions for *freestanding facilities*, which are important to understand. The AHA data define freestanding facilities as outpatient surgery centers operated by a hospital but housed outside the hospital. The SMG definition adds outpatient surgery centers operated by a third party within a hospital. These definitions contrast with the SASD definition which considers a facility freestanding only if it is housed outside the hospital and is operated by a third party.

SASD versus AHA

To compare the SASD to the AHA data, we constructed a crosswalk between AHA identifiers and SASD identifiers for each of the 7 states. In general, SASD surgery counts are higher than outpatient surgery counts reported in the AHA survey. The SASD counts are smaller than the AHA counts only for New Jersey and New York.

AHA community hospitals are usually matched to SASD facilities, although most states also show a number of SASD facilities unmatched to other types of AHA facilities. AHA non-community hospitals typically are not matched to SASD facilities.

AHA versus SMG

We also constructed crosswalks to match AHA identifiers to SMG facility identifiers for the 7 SASD states. Matching between AHA and SMG facilities turned out to be minimal – about 5 percent overall for the 7 states. This was expected because the AHA data report on hospital-based facilities, whereas the SMG data report on hospital-based facilities only if they are run by a third party.

SASD versus SMG freestanding facilities

We found differences between the SASD and the SMG freestanding facilities, which we define as non-AHA facilities in the SASD data and non-AHA facilities in the SMG data. Some differences may stem from failures to match facilities in the AHA data to facilities in the SMG data, caused by inconsistent names or addresses between the two data sources. Also, the SASD may contain data from facilities that were not engaged in ambulatory surgery or whose primary practice was something other than surgery.

We obtained a significant number of matches between the SASD and the SMG freestanding facilities only in Utah (22 percent), and Wisconsin (21 percent).

SASD versus SMG versus AHA

For the 7 SASD states, Table **3** compares 1999 SASD surgery counts with surgery counts from the 1999 AHA and SMG data. For each state the table presents the number of facilities and the number of surgeries for each combination of data sources. For example, the first line shows for Colorado the number of facilities that are matched in all three data sources along with the number of surgeries reported by each data source. Thus, there are 6 Colorado facilities matched in all three data sources and for the 6 facilities combined, the SASD reports 65,694 surgeries, the AHA reports 26,187 surgeries, and the FOSC reports zero surgeries.

For all states, the FOSC reports zero surgeries for all facilities that match to AHA facilities. Again, we speculate this may occur because the FOSC is primarily concerned only with surgeries in hospital-based facilities operated by third parties whereas the AHA is primarily concerned with surgeries in hospital-based facilities operated by hospitals.

It is important to keep in mind that the total facility count and the total surgery count across all three data sources probably overstates the true facility count and the true total surgery count for each state. The reason is that we probably failed to match some facilities across the three data sources. For example, it is possible that some of the “SASD only” facilities may also be counted in the “FOSC only” facilities.

Table 3: Comparison of SMG, SASD and AHA Outpatient Surgery Counts, 1999

State	Data Source	Facilities	SASD Surgeries	AHA Surgeries	FOSC Surgeries
Colorado	SASD + AHA + FOSC	6	65,694	26,187	0
	SASD + AHA only	62	283,714	178,673	0
	SASD only	2	357	0	0
	AHA only	17	0	11,816	0
	FOSC only	41	0	0	76,660
	Total	**128**	**349,765**	**216,676**	**76,660**
Florida	SASD + AHA only	189	1,384,287	784,716	0
	SASD only	310	996,398	0	0
	AHA + FOSC only	17	0	0	4,635
	AHA only	73	0	47,545	0
	FOSC only	236	0	0	689,784
	Total	**825**	**2,380,685**	**832,261**	**694,419**
Maryland	SASD + AHA + FOSC	6	63,423	58,661	0
	SASD + AHA only	42	290,836	262,138	0
	SASD + FOSC only	1	588	0	0
	SASD only	3	3,128	0	0
	AHA only	31	0	12,877	0
	FOSC only	143	0	0	185,712
	Total	**226**	**357,975**	**333,676**	**185,712**
New Jersey	SASD + AHA only	90	365,883	414,151	0
	SASD only	2	555	0	0
	AHA + FOSC only	5	0	0	0
	AHA only	24	0	1,400	0
	FOSC only	82	0	0	179,540
	Total	**203**	**366,438**	**415,551**	**179,540**
New York	SASD + AHA + FOSC	3	9,877	15,592	0
	SASD + AHA only	230	1,164,033	1,152,793	0
	SASD + FOSC only	2	4,945	0	11,925
	SASD only	27	76,135	0	0
	AHA only	63	0	35,318	0
	FOSC only	32	0	0	116,717
	Total	**357**	**1,254,990**	**1,203,703**	**128,642**
Utah	SASD + AHA + FOSC	2	12,564	8,025	0
	SASD + AHA only	38	116,930	112,006	0
	SASD + FOSC only	10	33,506	0	30,773
	SASD only	7	26,279	0	0
	AHA only	8	0	2,172	0
	FOSC only	9	0	0	25,950
	Total	**74**	**189,279**	**122,203**	**56,723**
Wisconsin	SASD + AHA + FOSC	6	46,395	27,365	0
	SASD + AHA only	118	464,824	301,643	0
	SASD + FOSC only	19	59,919	0	49,934
	SASD only	12	21,471	0	0
	AHA only	23	0	4,880	0
	FOSC only	21	0	0	52,597
	Total	**199**	**592,609**	**333,888**	**102,531**

For facilities matched between the SASD and the AHA, the SASD surgery counts tended to be larger than the AHA surgery counts. Only in New Jersey was the AHA count larger than the SASD count. In three states (Maryland, New York, and Utah), the counts were relatively close between the two sources. In the remaining four states, the SASD count tended to be much larger than the AHA count.

In the two states with a significant number of matches between SASD facilities and FOSC facilities (UT, WI), the total surgery counts are in close agreement between the two sources, except when both facilities are also matched to AHA facilities. For the other five states, the FOSC surgeries appear to be derived from a completely different set of outpatient surgery facilities.

According to the counts in Table 4, the freestanding facilities contribute a significant number of ambulatory surgeries. For the 7 SASD states in 1999, the percent of total ambulatory surgeries performed in FOSC freestanding facilities ranges from 10 percent in New York to 45 percent in Florida. This compares to the National Center for Health Statistic's 1996 National Survey of Ambulatory Surgery (NSAS) estimate of 16 percent. This approach excludes "freestanding" facilities not identified by SMG. However, according to SMG, the 1999 FOSC contains data on almost 99 percent of all freestanding facilities. The approach also assumes that the AHA survey includes and accurately counts all outpatient surgeries performed in hospital-based facilities.

CONCLUSION

Overall, the 1999 SASD files contain 5,491,741 ambulatory surgery records from 1,187 facilities. While such a rich data source is certain to have research value, especially for the 7 states, it is important to understand how complete the data are. Therefore, this report assesses the completeness of the SASD with respect to both the number of facilities and the number of ambulatory surgery visits it contains.

Our findings indicate that the types of facilities covered by the 1999 SASD varied across states. By matching SASD facilities with those in other data sources, we could classify many of them as either hospital-based or freestanding. In terms of facilities, the SASD from some states appear to cover mainly hospital-based facilities, while the SASD from other states also include a substantial portion of freestanding facilities. In terms of surgery visit counts, the data for most facilities in the SASD appear complete and consistent with other data sources.

Table 4: Ambulatory Surgery Counts by State

State	Facility Type	Count	Pct of Total
Colorado	AHA Comm Hospital – AHA Counts	207,411	70.7%
	AHA not a Comm Hospital – AHA Counts	9,265	3.2%
	FOSC (Not in AHA) – SMG Counts	76,660	26.1%
	Total	**293,336**	
Florida	AHA Comm Hospital – AHA Counts	805,809	52.9%
	AHA not a Comm Hospital – AHA Counts	26,452	1.7%
	FOSC (Not in AHA) – SMG Counts	689,784	45.3%
	Total	**1,522,045**	
Maryland	AHA Comm Hospital – AHA Counts	320,799	61.8%
	AHA not a Comm Hospital – AHA Counts	12,877	2.5%
	FOSC (Not in AHA) – SMG Counts	185,712	35.8%
	Total	**519,388**	
New Jersey	AHA Comm Hospital – AHA Counts	414,003	69.6%
	AHA not a Comm Hospital – AHA Counts	1,548	0.3%
	FOSC (Not in AHA) – SMG Counts	179,540	30.2%
	Total	**595,091**	
New York	AHA Comm Hospital – AHA Counts	1,176,107	88.3%
	AHA not a Comm Hospital – AHA Counts	27,596	2.1%
	FOSC (Not in AHA) – SMG Counts	128,642	9.7%
	Total	**1,332,345**	
Utah	AHA Comm Hospital – AHA Counts	120,031	67.1%
	AHA not a Comm Hospital – AHA Counts	2,172	1.2%
	FOSC (Not in AHA) – SMG Counts	56,723	31.7%
	Total	**178,926**	
Wisconsin	AHA Comm Hospital – AHA Counts	329,008	75.4%
	AHA not a Comm Hospital – AHA Counts	4,880	1.1%
	FOSC (Not in AHA) – SMG Counts	102,531	23.5%
	Total	**436,419**	
Overall	AHA Comm Hospital – AHA Counts	3,373,168	69.2%
	AHA not a Comm Hospital – AHA Counts	84,790	1.7%
	FOSC (Not in AHA) – SMG Counts	1,419,592	29.1%
	Total	**4,877,550**	

We conclude that the 1999 SASD can be very useful, especially for state-specific analyses. The only caveat is that some states' data are largely limited to hospital-based facilities. This limitation, however, may not be too severe. According to the 1996 NSAS, about 84 percent of ambulatory surgeries took place in hospital-based facilities, leaving only 16 percent that were performed in freestanding facilities. Consequently, the SASD provide coverage for the vast majority of ambulatory surgeries performed in 7 states.