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Evaluation of the State Ambulatory Surgery Databases 2001

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EXECUTIVE SUMMARY

Overview

This report evaluates and compares the 2001 State Ambulatory Surgery Databases (SASD) to the 2001 American Hospital Association (AHA) Annual Survey. The comparison is for the seven states that provided data for the 2001 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 SASD. Completeness is evaluated by comparing the SASD database to the facility-level data found in the AHA. Comparisons are made for number of facilities in the two databases, as well as numbers of discharges and major body groupings of surgeries. Particular attention is paid to the differing definitions of *freestanding facilities as compared to hospital-based facilities*.

Key Findings

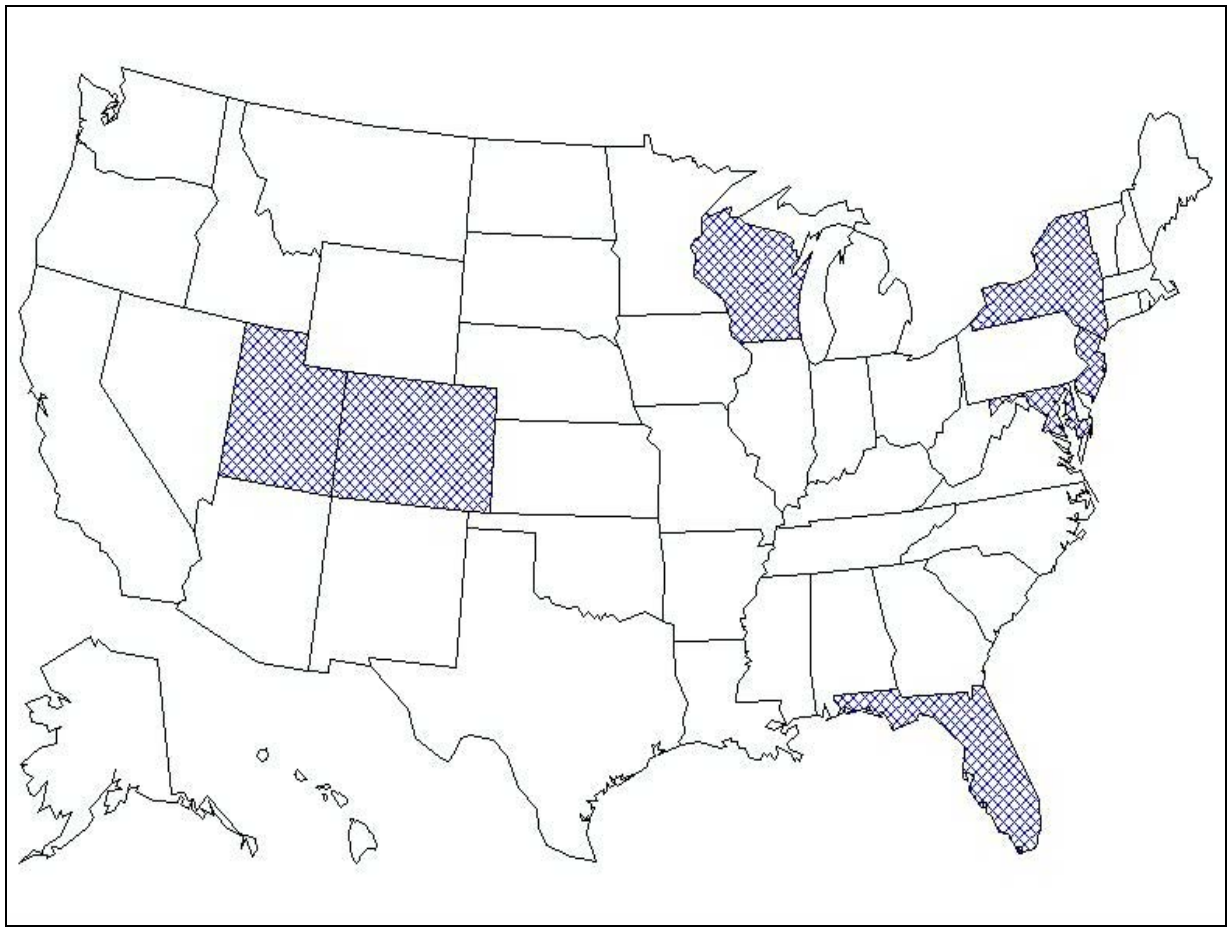
The 2001 CD SASD files contain 6,182,808 ambulatory surgery records from 1,237 facilities. At the facility level, the SASD's coverage varies across the states. In some states, the SASD mainly covers hospital-based facilities, while in other states the SASD reflects mostly freestanding facilities. For all states evaluated, the SASD appears to provide a complete and reliable count of surgery visits. The CD SASD can be very useful for state-specific analyses.

INTRODUCTION

Ambulatory surgeries have become more numerous and more common over the past two decades. The National Center for Health Statistics (NCHS) reports that, in the year 2000, over 60% of surgeries performed in community hospitals were conducted on an outpatient basis.[1] Moreover, between 1990 and 2000, the number of surgeries performed in freestanding ambulatory surgery centers rose from 2.3 million to 6.7 million.[2] 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. For this report, our objective is to evaluate the completeness of the 2001 State Ambulatory Surgery Databases (SASD) for each of the seven States that provide ambulatory surgery data to HCUP. The seven states that provide these data are Colorado, Florida, Maryland, New Jersey, New York, Utah, and Wisconsin.

HCUP States with SASD Databases



[1]Fried VM, Prager K, MacKay AP, Xia H. 2003. *Chartbook on Trends in the Health of Americans*. *Health, United States, 2003.* Hyattsville, Maryland: National Center for Health Statistics.
[2]Surgical Alliance Corporation. *Ambulatory Surgery Center*. http://www.surgicalalliance.com/asc.htm. Accessed March 17, 2004.

This report starts with an overview of the patient-level data that are presently available in the 2001 SASD. We then consider three alternative sources of facility-level data to benchmark the SASD files. First, we describe data available from the 2001 American Hospital Association (AHA) Annual Survey. Second, we describe data available from the 2001 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 2001 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. 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. In addition, we do not compare the SASD to the SMG FOSC database because the FOSC data were not complete enough to provide a valid comparison.

SOURCES OF AMBULATORY SURGERY DATA

Visit Level Data

2001 HCUP State Ambulatory Surgery Databases (SASD)

Ambulatory surgery visit data were collected as part of HCUP beginning in 1997. For 2001, seven standardized State Ambulatory Surgery Databases (SASD) were constructed and provided to the Agency for Healthcare Research and Quality (AHRQ) as internal research databases. Table 1 identifies the states offering ambulatory surgery data, and specifies the number of hospital-based and freestanding facilities included in each SASD.

Table 1. Number of Hospital-Based and Freestanding Facilities by State, 2001 SASD

State	Number of Hospital-Based Facilities	Number of Freestanding Facilities	Total Number Facilities
Colorado	72	0	72
Florida	201	337	538
Maryland	48	0	48
New Jersey	90	0	90
New York	232	37	269
Utah	47	14	61
Wisconsin	127	32	159

The 2001 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 seven 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.

To better understand the types of surgeries captured in the SASD, Appendix 1 of this report presents the number of surgeries performed for the following 16 major body systems:

- Nervous
- Endocrine
- Eye
- Ear
- Nose, mouth and pharynx
- Respiratory
- Cardiovascular
- Hemic and lymphatic
- Digestive
- Urinary
- Male genital
- Female genital
- Obstetrical
- Musculoskeletal
- Integumentary.

Appendix 1 also includes identifies the number of surgeries for two additional categories: "Miscellaneous Diagnostic and Therapeutic Procedures" and "Other."

Most SASD files are available to researchers for a fee either through the appropriate state agency or 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.hcup-us.ahrq.gov).

Facility Level Data

We used facility-level data to benchmark the SASD files. Three possible sources of facility information were identified: the AHA Annual Survey, the CMS POS File, and the SMG FOSC file. These three data sources together cover the universe of ambulatory surgery facilities.

Each database covers a slightly different set of facilities as shown in Table 2. For the purposes of this table, facilities are defined as *hospital-based* if they are physically connected to main hospital facilities; all other facilities are considered to be *freestanding*. Facilities in both settings may be run either by a hospital or by a third party. However, it is important to note that each data source uses different criteria to distinguish these two types of facilities. The specific definitions for each data source are discussed in more detail later in this report.

American Hospital Association Annual Survey of Hospitals

The American Hospital Association (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.

Centers for Medicare and Medicaid Services Provider of Services File

The Centers for Medicare and Medicaid Services (CMS) 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.

Table 2. Comparison of Ambulatory Surgery Provider Information Sources

Type of Facility	AHA	POS[3]	SMG
AS facility – hospital-based and controlled	Yes	Yes	No
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	No	Yes	Yes
Services originating at other sites such as physician offices	No	Yes	No

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.

SMG Freestanding Outpatient Surgery Center Data

The SMG Marketing group profiles freestanding ambulatory surgery centers on an annual basis in their Freestanding Outpatient Surgery Center (FOSC) database. These data are now provided by the company, Verispan.

These data aim to accurately profile all but the most recently opened outpatient surgery centers. Data are collected through an annual survey of freestanding outpatient surgery centers and all surgery center data are self reported by the facilities. Up until the 2001 data year, the survey was mailed to all facilities.

Facility reporting rates in the SMG FOSC databases were over 98 percent in 1999. However, the 2001 contained fewer than half of the number of facilities included in the 1999 data. Because the 2001 FOSC data were incomplete, they were not used as a data source for the 2001 comparisons.

COMPARISONS OF AMBULATORY SURGERY DATA

Differentiating between hospital-based outpatient surgery centers and freestanding facilities is not always straightforward. The AHA 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. In contrast, the SASD definition considers a facility freestanding only if it is housed outside the hospital and is operated by a third party.

[3] Note: Coverage is limited to providers reimbursed for Medicare covered services.

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 seven states. Table 3 presents the number of facilities and ambulatory surgeries by state captured in the 2001 SASD and AHA databases. For each state, the first row presents the number of facilities included in both databases, and the number of surgeries performed in each facility as reported by each individual data source. The second row identifies the number of surgeries included only in the SASD data, with the corresponding number of surgeries. The third and last row for each state provides the number of facilities and surgeries captured only in the AHA data.

Table 3. Number of Facilities and Surgeries by State and Data Source, 2001

State	Data Source	Number of Facilities	Number of SASD Surgeries	Number of AHA Surgeries
Colorado	SASD + AHA	71	367,299	197,679
	SASD Only	1	37	0
	AHA Only	15	0	10,259
Florida	SASD + AHA	199	1,577,758	848,580
	SASD Only	339	1,204,483	0
	AHA Only	62	0	35,532
Maryland	SASD + AHA	48	384,041	330,571
	SASD Only	0	0	0
	AHA Only	29	0	9,599
New Jersey	SASD + AHA	88	343,896	395,835
	SASD Only	2	4,168	0
	AHA Only	23	0	5,378
New York	SASD + AHA	230	1,253,370	1,248,629
	SASD Only	39	129,240	0
	AHA Only	59	0	27,609
Utah	SASD + AHA	44	180,308	122,692
	SASD Only	17	54,729	0
	AHA Only	8	0	2,279
Wisconsin	SASD + AHA	121	580,273	358,874
	SASD Only	38	102,857	0
	AHA Only	20	0	6,625

For most states, the majority of facilities are captured in both the SASD and AHA data, though the AHA generally includes more facilities than the SASD. The most dramatic exception occurs in the state of Florida. For this state, the SASD contains 140 more facilities and nearly two million additional surgeries than the AHA data. For the remaining states, the AHA includes an average of 10 more facilities per state when compared with the SASD.

An examination of the number of surgeries reveals that the SASD captures more procedures than the AHA for every state except New Jersey. In this state, the AHA contains roughly 13 percent more surgeries than the SASD. For all other states, the SASD includes an average of 70 percent more surgeries than the AHA data. The greatest similarity is observed for Maryland and New York, for which the number of surgeries between the two databases varies by 13

percent and 8 percent, respectively. On the other hand, the variation is highest in Florida, Utah, and Wisconsin. For these states, the SASD contain more than 80 percent additional surgeries when compared with the AHA data.

It is important to note that the total facility and surgery counts in both databases may overstate the true facility and surgery counts for each state. This may occur because it is possible that the crosswalk did not match some facilities in the SASD and AHA databases. Therefore, some facilities categorized as "SASD only" may also be included as "AHA only."
Table 4 presents a comparison of the number of surgeries performed in community hospitals and the number of surgeries performed in non-community hospitals. The analyses rely on AHA data, and therefore use the AHA's definition of *community hospitals* to distinguish the two comparison groups. This definition includes all non-Federal, short-term, general, and specialty hospitals. It excludes hospital units of other institutions such as prisons, long-term care facilities, psychiatric hospitals, alcoholism or chemical dependency treatment centers, and rehabilitation facilities.

As the table illustrates, the majority of surgeries occur in community hospitals. However, it is important to recognize that this comparison does not include data from the SMG FOSC database, which is a primary source of ambulatory surgery data from freestanding facilities.

Appendix 1 offers further insight into the data captured in the 2001 SASD. This table presents the number of cases that are assigned to 17 broad categories. Fifteen categories are major body systems and one category identifies miscellaneous diagnostic and therapeutic procedures. The final grouping includes any procedures that could not be assigned to the other 16 categories for a variety of reasons, the most common of which is missing procedure data.

As illustrated in Appendix 1, the body system represented most frequently in the SASD is the digestive system; an average of 20 percent of all ambulatory surgeries occur under this major body system. The two body systems also treated frequently are the integumentary system (8%) and the musculoskeletal system (8%).

A number of body systems have very few cases. Those that have fewer than 1% of all ambulatory surgery cases include the following systems: endocrine (0.18%), heme and lymphatic (0.34%), and obstetrical (0.00%).

The types of ambulatory surgeries performed vary by state. A few states appear to include data that may be problematic for analyses. For example, the following states have over 50 percent of their ambulatory surgeries assigned to the category, "Other:" Florida (63%) and Maryland (51%). For the majority of these cases, the principal procedure code was missing.

However, a number of states appear to useful data for examining ambulatory surgeries. Those states that appear to be most representative of the sample averages include: Colorado and New York. The proportion of ambulatory surgeries assigned to the 17 categories for these two states are fairly similar to the average proportions of all states. The similarities are strongest for those body systems that are treated most and least frequently, as identified in the previous paragraphs.

CONCLUSION

Overall, the 2001 SASD files contain 6,182,808 ambulatory surgery records from 1,237 facilities. While such a rich data source is certain to have research value, especially for the seven 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.

Table 4. Number of Surgeries by State and Type of Hospital, 2001 AHA Data

State	Facility Type[4]	Surgery Counts	Percent of Total
Colorado	Community Hospital	201,029	96.7%
	Not a Community Hospital	6,909	3.3%
	Total	*207,938*	
Florida	Community Hospital	859,349	97.2%
	Not a Community Hospital	24,763	2.8%
	Total	*884,112*	
Maryland	Community Hospital	330,571	97.2%
	Not a Community Hospital	9,599	2.8%
	Total	*340,170*	
New Jersey	Community Hospital	399,564	99.6%
	Not a Community Hospital	1,649	0.4%
	Total	*401,213*	
New York	Community Hospital	1,254,924	98.3%
	Not a Community Hospital	21,314	1.7%
	Total	*1,276,238*	
Utah	Community Hospital	122,692	98.2%
	Not a Community Hospital	2,279	1.8%
	Total	*124,971*	
Wisconsin	Community Hospital	358,874	98.2%
	Not a Community Hospital	6,625	1.8%
	Total	*365,499*	

Our findings indicate that the types of facilities covered by the 2001 SASD varied across states. By matching SASD facilities with those in AHA data, 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.

[4] ***Type of Facility*** is based on the AHA's definition of *community hospitals.* This definition includes all non-Federal, short-term, general, and specialty hospitals. It excludes hospital units of other institutions such as prisons, long-term care facilities, psychiatric hospitals, alcoholism or chemical dependency treatment centers, and rehabilitation facilities.

We conclude that the 2001 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. Estimates state that in the year 2000, only 6% of outpatient surgeries were performed in freestanding facilities.[5] Consequently, the SASD provide coverage for the vast majority of ambulatory surgeries performed in seven states.

[5]Surgical Alliance Corporation. *Ambulatory Surgery Center*. http://www.surgicalalliance.com/asc.htm. Accessed March 17, 2004.

APPENDIX 1. NUMBER OF SURGERIES BY STATE AND BODY SYSTEM, 2001 SASD

State	Measure	Nervous System (1-9)	Endocrine System (10-12)	Eye (13-21)
Colorado	Number of cases	34,585	1,373	21,799
	Percent of total	9%	0%	6%
Florida	Number of cases	71,810	4,309	55,702
	Percent of total	3%	0%	2%
Maryland	Number of cases	12,877	505	13,608
	Percent of total	3%	0%	4%
New Jersey	Number of cases	17,639	269	30,095
	Percent of total	5%	0%	9%
New York	Number of cases	77,175	2,612	172,702
	Percent of total	6%	0%	12%
Utah	Number of cases	12,058	532	16,968
	Percent of total	5%	0%	7%
Wisconsin	Number of cases	71,986	1,811	66,562
	Percent of total	11%	0%	10%

State	Measure	Ear (22-26)	Nose, Mouth, and Pharynx (27-33)	Respiratory System (34-42)
Colorado	Number of cases	6,115	20,799	5,184
	Percent of total	2%	6%	1%
Florida	Number of cases	11,007	28,994	23,462
	Percent of total	0%	1%	1%
Maryland	Number of cases	4,069	9,158	2,905
	Percent of total	1%	2%	1%
New Jersey	Number of cases	8,412	22,313	3,864
	Percent of total	2%	6%	1%
New York	Number of cases	26,689	66,583	16,463
	Percent of total	2%	5%	1%
Utah	Number of cases	7,665	16,290	2,042
	Percent of total	3%	7%	1%
Wisconsin	Number of cases	15,612	29,189	8,235
	Percent of total	2%	4%	1%

State	Measure	Cardiovascular System (43-63)	Heme and Lymphatic System (64-67)	Digestive System (68-99)
Colorado	Number of cases	14,034	1,861	96,529
	Percent of total	4%	1%	26%
Florida	Number of cases	57,794	4,029	322,684
	Percent of total	2%	0%	12%
Maryland	Number of cases	10,247	951	51,615
	Percent of total	3%	0%	13%
New Jersey	Number of cases	11,273	2,383	75,764
	Percent of total	3%	1%	22%
New York	Number of cases	59,004	7,710	415,231
	Percent of total	4%	1%	30%
Utah	Number of cases	8,727	967	59,725
	Percent of total	4%	0%	25%
Wisconsin	Number of cases	30,201	3,383	232,802
	Percent of total	4%	0%	34%

State	Measure	Urinary System (100-112)	Male Genital System (113-118)	Female Genital System (119-121, 123-132)
Colorado	Number of cases	9,327	3,726	14,501
	Percent of total	3%	1%	4%
Florida	Number of cases	37,216	13,573	49,401
	Percent of total	1%	0%	2%
Maryland	Number of cases	8,729	2,914	16,927
	Percent of total	2%	1%	4%
New Jersey	Number of cases	16,698	7,779	44,051
	Percent of total	5%	18%	13%
New York	Number of cases	61,338	26,942	110,049
	Percent of total	4%	2%	8%
Utah	Number of cases	4,454	2,591	9,103
	Percent of total	2%	1%	4%
Wisconsin	Number of cases	26,210	9,417	27,099
	Percent of total	4%	1%	4%

State	Measure	Obstetrical (122, 133-141)	Musculoskeletal System (142-164)	Integumentary System (165-175)
Colorado	Number of cases	2,729	53,277	80,712
	Percent of total	1%	15%	22%
Florida	Number of cases	13,012	87,644	141,673
	Percent of total	0%	3%	5%
Maryland	Number of cases	129	24,178	21,869
	Percent of total	0%	6%	6%
New Jersey	Number of cases	356	59,211	36,083
	Percent of total	0%	17%	10%
New York	Number of cases	801	179,953	118,661
	Percent of total	0%	13%	9%
Utah	Number of cases	125	31,538	7,219
	Percent of total	0%	13%	3%
Wisconsin	Number of cases	4,724	87,286	61,266
	Percent of total	1%	13%	9%

State	Measure	Miscellaneous Diagnostic and Therapeutic Procedures (176-231)	Other	Total
Colorado	Number of cases	582	203	367,336
	Percent of total	0%	0%	
Florida	Number of cases	105,047	1,754,884	2,782,241
	Percent of total	4%	63%	
Maryland	Number of cases	7,693	195,667	384,041
	Percent of total	2%	51%	
New Jersey	Number of cases	9,820	2,054	348,064
	Percent of total	3%	1%	
New York	Number of cases	39,432	1,265	1,382,610
	Percent of total	3%	0%	
Utah	Number of cases	3,722	51,311	235,037
	Percent of total	2%	22%	
Wisconsin	Number of cases	6,930	417	683,130
	Percent of total	1%	0%	