DRAFT WORKING PAPER

FACILITY SERVICES FOR AMBULATORY SURGERY

BARBARA O. WYNN, BETH ANN GRIFFIN

WR-635-CHSWC
February 2009

Prepared for the Commission on Health, Safety and Workers' Compensation

This product is part of the RAND Institute for Civil Justice working paper series. RAND working papers are intended to share researchers' latest findings and to solicit informal peer review. They have been approved for circulation by the RAND Institute for Civil Justice but have not been formally edited or peer reviewed. Unless otherwise indicated, working papers can be quoted and cited without permission of the author, provided the source is clearly referred to as a working paper. RAND's publications do not necessarily reflect the opinions of its research clients and sponsors.
RAND® is a registered trademark.

RAND

CENTER FOR HEALTH AND SAFETY IN THE WORKPLACE
A Study by the RAND Institute for Civil Justice and RAND Health

DRAFT WORKING PAPER

FACILITY SERVICES FOR AMBULATORY SURGERY

BARBARA O. WYNN, BETH ANN GRIFFIN

WR-635-CHSWC
February 2009

Prepared for the Commission on Health, Safety and Workers' Compensation

This product is part of the RAND Center for Health and Safety in the Workplace working paper series. RAND working papers are intended to share researchers' latest findings and to solicit informal peer review. They have been approved for circulation by the RAND Center for Health and Safety in the Workplace but have not been formally edited or peer reviewed.
Unless otherwise indicated, working papers can be quoted and cited without permission of the author, provided the source is clearly referred
to as a working paper. RAND's publications do not necessarily reflect the opinions of its research clients and sponsors.

RAND

CENTER FOR HEALTH AND SAFETY IN THE WORKPLACE
A Study by the RAND Institute for Civil Justice and RAND Health

THE RAND CENTER FOR HEALTH AND SAFETY IN THE WORKPLACE

The **RAND Center for Health and Safety in the Workplace** is dedicated to reducing workplace injuries and illnesses. The Center provides objective, innovative, cross-cutting research to improve understanding of the complex network of issues that affect occupational safety, health, and workers' compensation. Its vision is to become the nation's leader in improving workers' health and safety policy.

The Center is housed at the RAND Corporation, an international nonprofit research organization with a reputation for rigorous and objective analysis on the leading policy issues of our time. It draws upon the expertise within three RAND research units:

- RAND Institute for Civil Justice, a national leader in research on workers' compensation
- RAND Health, the most trusted source of objective health policy research in the world
- RAND Infrastructure, Safety, and Environment, a national leader in research on occupational safety.

The Center's work is supported by funds from federal, state, and private sources.

For additional information about the Center, please contact:

John Mendeloff, Director
Center for Health & Safety in the Workplace
RAND Corporation
4570 Fifth Avenue, Suite 600
Pittsburgh, PA 15213-2665
John_Mendeloff@rand.org
(412) 683-2300, x4532
(412) 683-2800 fax
John_Mendeloff@rand.org

For additional information about this report, please contact the Principal Investigator:

Barbara Wynn
Senior Policy Analyst
RAND Corporation
1200 South Hayes Street
Arlington, VA 22202-5050
(703) 413-1100, x5413
Barbara_Wynn@rand.org

Preface

This working paper examines the types of ambulatory surgical procedures performed on injured workers covered by the California workers' compensation (WC) system and whether they vary by hospital outpatient and freestanding ambulatory surgery settings. It uses ambulatory surgery data for 2005-2007 from the California Office of Statewide Health Planning and Development. Data on ambulatory surgery have not been available previously. These analyses can help to identify whether there might be payment or quality of care issues for WC patients that warrant further examination. These findings should be of interest to policymakers and others involved in the medical care payment and quality of care issues under California's workers' compensation system.

The work presented here was performed for the California Commission on Health and Safety and Workers' Compensation under Contract Number 40536045. It is part of an on-going study evaluating the impact of recent legislative changes on the medical care provided to injured workers. A separate working paper has been prepared on hospital inpatient services furnished to WC patients in 2003-2007. The study's final report will integrate the analyses presented in these working papers with additional analyses of more recent data and findings from interviews with individuals with different perspectives on the WC medical treatment system.

Acknowledgements

The work represented in this working paper as well as the larger study evaluating the impacts of the recent legislative changes on medical care provided under California's workers' compensation program have benefited greatly from the on-going support and insights of Christine Baker, Executive Director of the California Commission on Workers' Compensation and Health and Safety as well as Irina Nemirovsky and Judge Lachlan Taylor, CHSWC staff members.

We would like to thank Lawrence Painter and Susan Polich, a former RAND colleague, for providing the programming support for the analyses. We appreciate the thoughtful comments provided on an earlier draft of this paper by our RAND colleagues, Susan Gates and John Mendeloff, and Frank Neuhauser at the University of California. We would also like to thank Courtney Myers and Benson Wong for their assistance in preparing the manuscript.

Background

Payers (insurers and self-insured employers) under California's WC program generally pay for medical services on a fee-for-service basis. The Administrative Director (AD) of the Division of Worker's Compensation maintains an Official Medical Fee Schedule (OMFS) that establishes the maximum allowable fees for most medical services. The OMFS amounts apply unless the payer and provider have contracted for a different price. Prior to 2004, fees for facility services furnished in connection with ambulatory surgery were exempt from the OMFS; payments for these services were based on rates the payer negotiated with the provider. SB 228 (Alarcon 2003) eliminated the exemption for these facility services effective January 1, 2004. As amended, Section 5307.1 of the California Labor Code requires that the OMFS for ambulatory surgery be based on the fee-related structure and rules of Medicare program. Ambulatory surgery can be performed in either a hospital or a freestanding ambulatory surgery center (ASC).The Labor Code requires that the same rates apply to hospital ambulatory surgery and procedures performed in freestanding ASCs.[1]

The OMFS limits allowable fees for ambulatory surgery facility services to 120 percent of the amounts payable under the Medicare program for comparable services furnished to hospital outpatients. Medicare assigns hospital outpatient procedures to ambulatory payment classification (APC) groupings of clinically coherent procedures with similar costs. Each APC has a relative weight reflecting the costliness of the median procedure in the group relative to the median cost for a mid-level clinic visit. To determine payment, the relative weight is multiplied by a conversion factor and geographic adjustment factor. Additional payments are made for high cost outlier cases. To determine the OMFS allowance, the Medicare payment is multiplied by 1.20. The 1.20 multiplier is intended to compensate for any higher costs attributable to WC patients and to provide a reasonable profit.[2]

We do not have access to data that would allow us to determine the impact of the OMFS expansion to ambulatory surgery facility services. A California Workers' Compensation Institute analysis of amounts paid in 2004 for a sample of outpatient surgery claims affected by the OMFS changes estimated that the average payment was 39 percent lower than it would have been in the absence of the fee schedule.[3] Using this study, the Workers' Compensation Insurance Rating Bureau of California estimated that the fee

---

[1] SB 288 also extended the OMFS to emergency department services. We will address these services in a separate working paper.

[2] Approximately 2 percent of Medicare payments are for atypically high cost services. For ASCs, a 1.22 percent multiplier is used in lieu of separate outlier payments because ASCs do not file cost report information with Medicare needed to make identify outliers on a case-by-case basis and determine the appropriate allowance.

[3] Swedlow, Alex. "ICIS SAYS: Early Returns on Workers' Comp Medical Reforms: Part 1. Changes in Outpatient Surgery Payments Following Adoption of the Outpatient Surgery Facility Fee Schedule. California Workers' Compensation Institute. Oakland, CA: 2005. Available at www.cwci.org last accessed 10/31/08.

schedule resulted in $700 million savings for insured employers for Accident Year 2004 prior to adjusting for the impact of other provisions on service volume.[4]

Until recently, no comprehensive data have been available on ambulatory surgery performed on WC patients and the available data have not distinguished between hospital outpatient and freestanding ASC services. In 2005, the California Office of Statewide Health Planning and Development (OSHPD) began to collect transaction-level data on ambulatory surgery. This working paper reports the results of analyses of data for 2005-2007 as part of our on-going evaluation of the impacts of changes in WC medical care.

Study Questions

We examined the following questions in our analyses of ambulatory surgery procedures:

- What volume and mix of procedures were performed on WC patients? What were the maximum allowable fees?
- How do the volume and mix of surgical services provided to hospital outpatients compare to services performed in ASCs?
- Using the discharge deposition on the records, are there differences in post-surgery hospital admission rates by the setting in which the surgery was performed?
- How does the setting for ambulatory surgical services provided to WC patients compare to other patients?
- Are surgical services that are commonly provided in physician offices being provided in hospital outpatient departments or ASCs? These are services that Medicare rules pay based on the physician fee schedule when performed in an ASC. A concern is that the OMFS allowance for ASC services could encourage a shift from physician offices to the more costly ASC setting.
- Are surgical services that Medicare pays for only as inpatient hospital services being provided to WC patients on an ambulatory basis? Medicare has a list of "inpatient only" procedures that it has determined can be safely performed on Medicare patients on an inpatient basis only. The OMFS adopted this list as part of the ambulatory surgery facility fee schedule rules but allows the services to be covered in an ambulatory surgery facility if the payer provides prior authorization.
- What facility services are being provided in conjunction with ambulatory surgery that are payable under the OMFS for physician and other practitioners? The Medicare-based fee schedules for facility services apply only to ambulatory surgery and emergency services. Other services, such as diagnostic tests, are subject to the OMFS for physician and other practitioner services. Medicare has different payment rates for the technical component of diagnostic tests provided in hospitals versus non-hospital settings. The DWC is considering whether to adopt Medicare-based fee schedules for physician services. One issue in doing so is whether to adopt Medicare's site-of-service differentials or continue to establish the same maximum allowable fees across settings for other than ambulatory surgery and emergency services.

---

[4] Workers' Compensation Insurance Rating Bureau, 2008 Legislative Cost Monitoring Report Released: October 9, 2008. Available at www.wcirbonline.org last accessed 10/31/08.

- What percentage of ASC patient encounters are for WC patients? Is there a relationship between a facility's reliance on WC patients and profitability? The answer to this question could be informative in gauging the adequacy of OMFS payments.

The study questions are directed understanding the types of procedures performed on WC patients in ambulatory surgery facilities, whether they vary by setting, and how they compare to ambulatory surgical procedures for non-WC patients. This type of information has not been available in the past and could inform whether there might be any payment or quality of care issues that warrant further examination. Ideally, the OMFS allowances should provide incentives for the provision of surgical services in the least costly setting that is medically appropriate. Excessive allowances can have the unintended consequences of creating incentives to deliver care in a more costly setting (e.g., procedures that can be safely performed in a physician office shifting to ASCs) or medically inappropriate setting (e.g., services that should be performed on an inpatient basis being performed as ambulatory surgery). Inadequate allowances can also have perverse incentives for where care is delivered (e.g., procedures that can be safely performed as ambulatory surgery being performed as inpatient services). We do not have access to pre-2005 trend data that could be used to investigate the changes that have occurred since the implementation of the OMFS in 2004 in the volume, mix, site of ambulatory surgery (hospital outpatient vs. ASC), and payments.

Data and Methods

We used administrative data obtained from OSHPD for 2005-2007 ambulatory surgery encounters for our analyses. OSHPD requires each licensed facility providing ambulatory surgery in California to submit an outpatient encounter record each time a patient is treated. These facilities report their encounter data via the Medical Information Reporting for California System (MIRCal). OSHPD makes the data available in a public use file after it has been screened by automated reporting software and corrected by the individual facilities. [5] These transaction-level data for each ambulatory surgery encounter include basic patient demographics such as sex, age, race, ethnicity and zip code of residence, procedures performed, disposition code, diagnoses, expected payer, and facility level information such as license type of the reporting facility and facility ID.

We grouped the OSHPD data into APCs. We used the expected payer variable to identify WC patients and developed summary statistics for WC and non-WC patients receiving ambulatory surgery. In our comparisons to WC patients, we included only non-WC patients age 18-64 who were not covered by Medicare, Medicaid, or Title V. We also computed the estimated payment for each record in the OSHPD data using the following method and information from the DWC website.

1. We assigned relative weights to each APC.

[5] The documentation includes an exceptions report for facilities that were unable to comply with full reporting requirements. We did not identify any problems of concern for our analyses. The most frequently noted problem was a facility's inability to report race/ethnicity codes.

2. We applied the discounting rules for multiple surgical procedures and summed the relative weights for each record.
3. We multiplied the sum of the relative weights by the conversion factor applicable to the county where care was provided and the date of service to obtain the total estimated amount allowed under the OMFS for that record. We used a 1.22 multiplier and did not compute outlier payments for individual encounters.

In addition to the transaction-level reporting, OSHPD requires every licensed specialty clinic to submit an Annual Utilization Report by February 15th each year for the prior calendar year. The reports contain descriptive information on services and encounters, staffing, an income statement of revenues and operating costs, and capital expenditures. Clinics submit data to OSHPD through a web-based reporting system known as ALIRTS (Automated Licensing Information and Report Tracking System). After all individual clinic reports are received and approved, OSHPD creates the Specialty Clinic Database. The data are "as reported" by each facility after complying with input quality control edits. ASCs are identified by the license category on the report.

We extracted the data in the 2005Annual Utilization Report for ASCs and computed the ratio of revenue to expenses as a measure of profitability. We then linked the Annual Utilization Report information for ASCs to the 2005 OSHPD transaction -level data for ambulatory surgery. The transaction-level data has 313 ASCs that had at least one WC patient encounter. We were able to link the transaction-level information to the OSHPD utilization data for 296 of these facilities. [6]

Results

Distribution of AS Procedure Volume for WC Patients

Between 2005-2007, the number of annual WC encounters in the OSHPD data for ambulatory surgery declined 8 percent from 118,869 to 109,363 encounters. The decline is not unexpected because the number of injuries with days lost from work fell 6 percent over the period and nearly 25 percent between 2003-2007.[7] The average number of services (APCs) per encounter increased slightly (from 1.6 to 1.8 per encounter), resulting in a slight increase in the total number of APCs reported for WC patients over the period. The number of APCs reported for surgical procedures increased from 179,128 to 183,005. About 15.000-16,000 services grouped to APCs for which a facility fee was not payable each year. These services are discussed below in the section entitled *Services Payable Under the OMFS for Physician Services.*

[6] Eight facilities, four of which closed during the year, did not submit final financial data for the Annual Utilization Report. The remaining facilities were non-respondents to the Annual Utilization Report.

[7] Department of Industrial Relations, Division of Labor Statistics, Table 2 Numbers of nonfatal occupational injuries and illnesses by selected industries and case types, 2003-2007. Available at www.dir.ca.gov/dsr/nonfatal.htm as of 2/1/09.

Table 1 Ambulatory Surgery Procedures Accounting for At Least One Percent of Volume in 2005 - 2007

	2005		2006		2007	
Total WC Claim Records	118,869		114,791		109,363	
Total APCs for WC Claims	195,774		193,253		199,074	
Surgical APCs		% of total		% of total		% of total
Nerve Injections	61,197	34.16	61,579	34.54	63,307	34.59
Arthroscopy	48,303	26.97	49,992	28.04	53,707	29.35
Nerve Procedures	14,371	8.02	14,056	7.88	13,860	7.57
Musculoskeletal Except Hand and Foot	13,466	7.52	13,059	7.33	12,243	6.69
Hand Musculoskeletal Procedures	8,882	4.96	8,782	4.93	8,351	4.56
Hernia/Hydrocele Procedures	5,604	3.13	4,440	2.49	4,741	2.59
Excision/ Biopsy	4,339	2.42	4,202	2.36	4,115	2.25
Skin Repair	3,498	1.95	3,583	2.01	3,546	1.94
Treatment Fracture/Dislocation	3,384	1.89	3,147	1.77	3,095	1.69
All Other Surgical APCs	16,084	8.98	15,429	8.65	16,040	8.76
Subtotal for Surgical APCs	179,128	100.00	178,269	100.00	183,005	100.00
APCs for Other Services With No Facility Fee)	16,646		14,984		16,069	
Total	195,774		193,253		199,074	

Nine services each account for at least one percent of ambulatory surgery procedures (Table 1). The proportion of procedures accounted for by the different types of procedures was relatively stable over the period. In total, these procedures account for 91 percent of the services for which an ambulatory surgery fee was allowable in each of the years. In 2007, nerve injections accounted for 35 percent of the volume, followed by arthroscopy procedures, which accounted for 29 percent of the volume. The remaining high-volume procedures each accounted for 8 percent or less of the volume.

Distribution of Maximum Allowable Fees for Surgical Services for WC Patients

Table 2 shows the estimated maximum allowable fees for ambulatory surgery facility fees for 2005-2007. The total fees grew from $223.6 million to $258.7 million over the period. Sixteen types of services, most of which were also high volume, accounted for at least one percent of payments in one or more of the three years. Three types of services accounted for 10 percent of more of the maximum allowable fees in 2007 (and the earlier years): Arthroscopy (45.7 percent), Musculoskeletal Procedures except Hand and Foot (11 percent) and Nerve Injections (9.9 percent). Three types of procedures on the high-cost listing accounted for less than one percent of volume but involved relatively expensive devices: Implantation of Neurological Device, Percutaneous Implantation of Neurostimulator Electrodes (Excluding Cranial Nerve), and Implantation of Drug Infusion Device.

Table 2 Ambulatory Surgery Procedures Accounting for At Least One Percent of Maximum Allowable Fees
2005 - 2007

Surgical APCs (Collapsed)		% of total		% of total		% of total
Arthroscopy	$97,689,960	43.7	$109,443,595	45.3	$118,266,223	45.7
Musculoskeletal Except Hand and Foot	$25,088,356	11.2	$25,392,280	10.5	$28,368,248	11.0
Nerve Injections	$22,203,035	9.9	$23,366,655	9.7	$25,569,782	9.9
Nerve Procedures	$16,647,419	7.4	$17,935,293	7.4	$15,840,326	6.1
Hernia/Hydrocele Procedures	$9,504,527	4.3	$8,752,418	3.6	$8,896,121	3.4
Hand Musculoskeletal Procedures	$9,048,705	4.0	$9,945,042	4.1	$9,716,286	3.8
Treatment Fracture/Dislocation	$8,158,969	3.6	$10,295,843	4.3	$10,573,321	4.1
Implantation of Neurological Device	$7,277,780	3.3	$6,307,670	2.6	$6,248,035	2.4
Excision/ Biopsy	$4,482,702	2.0	$5,042,243	2.1	$5,497,688	2.1
Percutaneous Implantation of Neurostimulator Electrodes, Excluding Cranial Nerve	$3,297,484	1.5	$3,922,975	1.6	$5,808,017	2.2
Laminotomies and Laminectomies	$2,176,083	1.0	$2,516,339	1.0	$2,610,795	1.0
Laparoscopy	$1,782,145	0.8	$1,957,235	0.8	$2,156,321	0.8
Skin Repair	$1,724,311	0.8	$1,698,278	0.7	$1,765,718	0.7
Foot Musculoskeletal Procedures	$1,639,083	0.7	$2,137,003	0.9	$2,274,994	0.9
Arthroplasty without Prosthesis	$1,423,875	0.6	$1,529,731	0.6	$1,676,156	0.6
Implantation of Drug Infusion Device	$1,365,323	0.6	$1,487,925	0.6	$2,802,778	1.1
All Other Surgical APCs	$10,063,089	4.5	$9,938,637	4.1	$10,623,738	4.1
Total for Surgical APCs	$223,572,846	100.0	$241,669,162	100.0	$258,694,547	100.0

Distribution of Ambulatory Surgery Procedure Volume and Allowable Fees for WC Patients by Setting

Table 3 shows the distribution of ambulatory surgery procedures across hospitals and ASCs. Overall, about 34 percent of ambulatory surgery was performed in hospitals and 66 percent was performed in ASCs in 2005. For most procedures, the percentage performed in hospitals fell slightly over the period so that the overall percentage performed in hospitals fell from 34.2 percent in 2005 to 30.6 percent in 2007. There are differences, however, across the groups of services. Nerve injections were performed only 21 percent of the time in hospitals in 2007; in comparison, hernia repairs were done 57 percent of the time in hospitals.

Table 3 Distribution of High Volume WC Surgical Procedures by Setting

Type of Service	2005 Total Number of WC Services	2005 % of Services in ASC	2005 % of Services in Hosp	2006 % of Services in Hosp	2007 % of Services in Hosp
Nerve Injections	61,197	75.2%	24.8%	24.1%	21.4%
Arthroscopy	48,303	64.7%	35.3%	35.7%	31.3%
Nerve Procedures	14,371	66.2%	33.8%	31.6%	32.6%
Musculoskeletal Procedures Except Hand and Foot	13,466	64.8%	35.2%	34.8%	30.8%
Hand Musculoskeletal Procedures	8,882	60.8%	39.2%	38.4%	35.4%
Hernia/Hydrocele Procedures	5,604	50.7%	49.3%	59.5%	57.1%
Excision/ Biopsy	4,339	56.4%	43.6%	42.5%	38.4%
Skin Repair	3,498	45.2%	54.8%	48.4%	43.5%
Treatment Fracture/Dislocation	3,384	52.0%	48.0%	47.6%	43.9%
Percutaneous Implantation of Neurostimulator Electrodes, Excluding Cranial Nerve	860	66.9%	33.1%	32.8%	35.9%
Laminotomies and Laminectomies	751	63.1%	36.9%	40.2%	32.7%
Implantation of Neurological Device	430	60.7%	39.3%	36.9%	39.4%
Implantation of Drug Infusion Device	118	52.5%	47.5%	43.7%	34.3%
All Surgical Services	179,128	65.8%	34.2%	33.6%	30.6%

Comparison of Patient Disposition Upon Discharge By Setting

Table 4 shows the disposition of WC patients following ambulatory surgery by setting in 2005. Most cases, 97.9%, were discharged home after the surgical procedure was performed. Other discharge destinations include a variety of settings, including home with home health services, rehabilitation hospitals, and nursing facilities. A significantly

higher percentage was admitted to a short-term acute care hospital from ASCs than from hospital outpatient surgery (1.6% vs. 0.05%, respectively; p<0.001). When we looked at this issue by health service area, we found that considerable variation in the proportion of patients admitted to short-term care hospitals following ambulatory surgery. In most areas, less than one percent was admitted following ambulatory surgery. The rates were significantly higher in three areas: Mid-Coast (2.5%), West Bay (2.7%), and Santa Clara (18.5%). Further analysis is needed to understand the reason for the higher admission rates. Potential explanations include data problems, quality of care issues, and potential gaming of the payment system by performing ambulatory surgery on patients who should have been admitted for inpatient surgery.

Table 4. Distribution of Disposition Codes Among WC Patients After Ambulatory Surgery in 2005

	All WC Patients		Hospital Patients		ASC Patients	
Patient Disposition After AS	Number	% of WC Patients	Number	% of WC Patients	Number	% of WC Patients
Home	116,417	97.9%	38,994	98.2%	77,423	97.8%
Short- term hosp	1,254	1.1%	20	1%	1,234	1.6%
Other	1,180	1.0%	673	1.7%	507	0.6%

Comparison of Services Provided to WC and Non-WC Patients By Setting

Table 5 Comparison of Intensity of Ambulatory Surgical Services Provided to WC and Non-WC Patients Age 18-64 (Exclusive of Medicare and Medicaid Patients) in 2007

	All		**Hospital**		**ASC**	
	WC	**Non-WC**	**WC**	**Non-WC**	**WC**	**Non-WC**
Total Records with Surgical APC	105,901	1,209,812	32,977	709,996	72,924	499,816
Total Surgical APCs	183,005	1,678,167	56,017	989,312	126,988	688,855
Average Relative Weight Per APC	20.9	18.3	23.0	20.2	19.9	15.6
Average Number of Surgical APCs Per Record	1.7	1.4	1.7	1.4	1.7	1.4
Average Relative Weight Per Record	36.1	25.3	39.1	28.1	34.7	21.4

Table 5 compares the resource intensity of ambulatory surgical services provided in facility settings to WC patients to non-WC patients age 18-64 exclusive of patients covered by Medicare, Medicaid, and Title V. The average relative weight is a measure of the relative costliness of performing different surgical procedures. Overall, the average relative weight for WC patients is higher (20.9 versus 18.3) and WC patients average more surgical procedures per encounter (1.7 versus 1.4). Taking into account both factors, the average relative weight per encounter is 42 percent higher for WC patients (36.1 vs. 25.3). For both patient populations, more resource-intensive encounters are provided in the hospital setting than in freestanding ambulatory surgery centers. For WC patients, surgical encounters in hospital settings are 13 percent more resource-intensive

than those performed in ASCs (an average relative weight of 39.1 versus 34.7). In comparison, the surgical encounters for non-WC patients in hospital settings are on average 31 percent more costly than those in ASCs.

Overall, 31 percent of WC surgical services were performed in the hospital setting compared to 59 percent of surgical services performed on the non-WC comparison group. (Table 6). While non-WC patients consistently receive a higher proportion of surgical services in hospital settings, the differences vary across the high-volume WC procedures. For example, nerve injections are performed 21 percent of the time on WC patients in hospital settings compared to 34 percent of the time for non-WC patients. In particular, the differential is smaller for nerve injections (21.4 percent versus 34.1 percent) and skin repair procedures (43.5 percent versus 53.5 percent) than for other procedures.

Table 6 Comparison of Proportion of Services Provided in Hospital Settings for WC and Non-WC Patients Age 18-64 (Exclusive of Medicare and Medicaid) in 2007

Type of Service	WC % of Services in Hosp	Non-WC % of Services in Hosp
Nerve Injections	21.4%	34.1%
Arthroscopy	31.3%	54.8%
Nerve Procedures	32.6%	63.3%
Musculoskeletal Procedures Except Hand and Foot	30.8%	62.7%
Hand Musculoskeletal Procedures	35.4%	61.4%
Hernia/Hydrocele Procedures	57.1%	80.0%
Excision/ Biopsy	38.4%	69.3%
Skin Repair	43.5%	53.5%
Treatment Fracture/Dislocation	43.9%	71.4%
Percutaneous Implantation of Neurostimulator Electrodes, Excluding Cranial Nerve	35.9%	71.4%
Laminotomies and Laminectomies	32.7%	71.4%
Implantation of Neurological Device	39.4%	86.7%
Implantation of Drug Infusion Device	34.3%	66.8%
All Surgical Services	30.6%	59.0%

The data for the comparison is inclusive only of procedures reported as ambulatory surgical procedures performed in hospitals and licensed ambulatory surgery centers. Data are not readily available to include ambulatory surgical procedures that are performed in physician offices in the comparison. Thus, the comparison shows the relative distribution of surgical procedures performed in facility settings but does not provide a complete picture of where lower-intensity surgical procedures are performed. For some lower-level APCs, a substantial proportion of the procedures are likely to be performed in a physician office. For example, a RAND study using national data for large employers found that 83 percent of Level II and 67 percent of Level III nerve injections provided to non-Medicare

patients were performed in physician office settings.[8] The relative distribution across all settings has payment implications because the facility fee is payable under the OMFS for services provided in facility settings but not physician offices.

Services Commonly Done in a Physician Office

As noted above, surgical services performed in hospital outpatient facilities and ASCs qualify for facility fees under the OMFS that are not payable when the services are provided in a physician office. (Under the OMFS, the allowance for a physician service does not vary by site of service). While we do not have data to determine the frequency with which procedures were performed in physician offices, we can determine whether procedures commonly performed in physician offices were frequently performed in these higher-cost facility settings. To categorize procedures for the purposes of this analysis, we used a Medicare listing of procedures that are commonly performed in physician offices.[9] We computed the percentage of all surgical procedures that are Medicare-defined office-based procedures. Overall, 0.9 percent of all WC surgical procedures met Medicare's office-based procedure definition (Table 7). Most of these procedures were concentrated in the APCs for nerve injections, where they accounted for 2.5 percent of all nerve injection procedures provided in a facility setting. The office-based nerve injection procedures were furnished 85 percent of the time in ASCs. The non-WC comparison group received about the same percentage of office-based procedures in a facility setting (0.6 percent). While most non-WC office-based services were eye or ear, nose or throat (ENT) procedures, 3.1 percent of the nerve injections were office-based procedures.

Table 7 Office-based Procedures Performed in Ambulatory Facility Settings in 2007

Description Total Surgical Procedure	WC			Non-WC		
	Total	% Clinic	%Hosp	Total	% Clinic	%Hosp
Total Office Procedures	1,637	82.7%	17.3%	10,338	44.6%	55.4%
% of Total Surgical Procedures	0.9%			0.6%		
Office-based Nerve Injections	1,579	84.9%	15.1%	4,646	65.7%	34.3%
% of Total Nerve Injections	2.5%			3.1%		

Inpatient Only Procedures

The Medicare program has determined that certain procedures should only be performed on an inpatient basis on Medicare patients. The inpatient list has been incorporated into

[8] Wynn et al., 2008.

[9] Prior to January 1, 2008, Medicare excluded procedures commonly performed in a physician office from the program's list of ASC-covered procedures. The purpose of the exclusion was avoid creating a financial incentive for surgical services to migrate from physician offices to ASCs in order to obtain additional payment for facility fees. Medicare dos not apply this exclusion to surgical services performed in hospital outpatient departments. Because the OMFS adopted the hospital outpatient payment rules for ASC services, the exclusion does not apply to surgical services provided to WC patients. Effective January 1, 2008, Medicare pays for these procedures when they are performed in an ASC using the practice expense component of the physician fee schedule.

the OMFS; however, payers may approve the procedures in an ambulatory surgery setting on a case-by-case basis at a negotiated rate.[10] We compared the list of inpatient only procedures to the WC procedures performed in ambulatory settings. We found few procedures on this list being performed in ambulatory surgery facilities. More of these procedures were spinal procedures than other types of services (Table 8). The non-WC population received about the same proportion of inpatient procedures in ambulatory settings, but the procedures were spread across a wider range of services. Notably, 80 percent of the WC inpatient procedures were performed in freestanding ASCs compared to 14 percent for all non-WC inpatient procedures and 37 percent for non-WC spinal procedures.

Table 8 Inpatient Procedures Performed in Ambulatory Facility Settings in 2007

	WC			Non-WC		
Description	**Total**	**% ASC**	**%Hosp**	**Total**	**% ASC**	**%Hosp**
Total Inpatient Procedures	705	80.0%	20.0%	5,730	14.2%	85.8%
% of Total Surgical Procedures	0.4%			0.3%		
Spinal Bone Grafts	104	87.5%	12.5%	124	33.9%	66.1%
Spinal Fusion	127	92.9%	7.1%	217	29.5%	70.5%
Insert, reinsert, or remove spinal fixation device	143	90.2%	9.8%	177	38.4%	61.6%
Spinal exploration/decompression	84	98.8%	1.2%	83	65.1%	34.9%
Other spinal procedures	26	96.2%	3.8%	57	24.6%	75.4%

Services Payable Under the OMFS for Physician Services

About 15,000-16,000 procedures were reported annually over the study period for services performed in facility settings that were not eligible for a separate facility fee under the OMFS. This count does not include tests that are payable under the OMFS for diagnostic clinical laboratory tests. Several types of services are involved, including significant non-surgical procedures such as cardiac catheterization, ancillary services such as x-rays, and evaluation and management visits occurring in conjunction with a surgical procedure. The most significant APC groupings and reported volume in 2007 were:

- Discography; 1,371 encounters
- Diagnostic Cardiac Catheterization; 236 encounters
- Myelography; 2,656 encounters
- Fluoroscopy; 4,266 encounters
- Plain Film X-ray Except Teeth Including Bone Density Measurement; 2,298 encounters

These particular services involve both a technical component (the cost of performing the procedure) and a professional component for the physician's supervision and

[10] In addition to the "inpatient only" list of procedures, Medicare also distinguishes between ambulatory surgery that can safely be performed in a hospital outpatient facility and procedures that can be safely performed on Medicare patients in an ASC. The list of approved ASC procedures was outdated when the SB 288 provisions were implemented and was not incorporated into the OMFS. Medicare updated and expanded the list of approved ASC procedures in 2008.

interpretation of the results. Under the OMFS rules, the services are not eligible for a facility fee under the OMFS for hospital outpatient services; rather, the maximum allowable fee for the technical component that applies when the service is performed in an office setting also applies to the facility setting.

The OMFS policy deviates from the Medicare rules, where payments differ across ambulatory sites for facility costs related to providing a service:

- Non-surgical services provided in hospitals are paid under the same policies as surgical services. Beginning in 2008, however, ancillary services that are an integral part of a primary procedure are no longer separately payable but bundled into the payment for the primary procedure. Under this policy, discography, myelography, and fluoroscopy are now bundled into the payment for the primary procedure (e.g., fluoroscopic guidance for nerve injections). The separate OMFS physician fee schedule allowance is not longer applicable unless no primary procedure is performed.
- Medicare covers non-surgical procedures in an ASC only if they are furnished in conjunction with a covered surgical procedure. Separately payable ancillary services are paid the same as services provided in an office setting.
- Under the OMFS for physician services, the allowances do not vary across settings. The Medicare physician fee schedule generally provides lower physician payments for services performed in a facility-setting than in an office-setting. If a diagnostic test is performed in a facility setting, the physician is paid only for the professional component of the service and the facility receives payment for the technical component.

The DWC is considering whether to adopt Medicare-based fee schedules for physician services. One of the policy decisions that will need to be made in doing so is whether to continue to pay facilities for non-surgical services using the physician fee schedule or whether to adopt Medicare site-of-service differential payments for these services. Modeling the impact of the alternative policies is complicated because of the differences in the Medicare rules regarding the services that are included in the fee schedule rate.

ASC Patient Workload and Profitability

Overall, WC patients accounted for 4.7% of procedures reported for ambulatory surgery encounters in 2005 (Table 9). With respect to high volume WC procedures, the proportion performed on WC patients varied, ranging from 3.4 percent of excisions and biopsies to 54.7 percent of discographies.

At the time the OMFS was extended to ambulatory surgery facility services, ASCs expressed concern over the adequacy of the OMFS allowances and suggested that services might shift from ASCs to hospital settings. Our ability to examine this issue is limited because the first year of OSHPD data collection is 2005. We do not have access to pre-OMFS transaction data to analyze whether shifts in the site of service occurred when the OMFS was implemented in 2004 that might be indicative of payment issues.

Table 9 WC Distribution of WC Encounters as Percent of Total Encounters in ASCs

Type of Service	Number of Services- All Patients	WC % of Services
Nerve Injections	366,191	16.7%
Level I	36,240	14.7%
Level II	56,004	15.2%
Level III	262,473	17.1%
Level IV	11,474	21.8%
Arthroscopy	235,668	20.5%
Level I	159,258	19.0%
Level II	76,410	23.7%
Nerve Procedures	45,517	31.6%
Level I	42,329	32.1%
Level II	3,188	24.2%
Musculoskeletal Procedures Except Hand and Foot	80,097	16.8%
Level I	32,240	10.3%
Level II	20,363	19.7%
Level III	15,927	19.7%
Level IV	11,567	25.5%
Hand Musculoskeletal Procedures	49,086	18.1%
Level I Hand Musculoskeletal Procedures	35,974	19.5%
Level II Hand Musculoskeletal Procedures	13,112	14.1%
Hernia/Hydrocele Procedures	90,954	6.2%
Open/Percutaneous Treatment Fracture or Dislocation	33,712	10.0%
Myelography	8,061	39.3%
Excision/Biopsy	113,192	3.8%
Level I	19,235	2.9%
Level II	20,289	0.7%
Level III	24,290	2.1%
Level IV	49,378	6.3%
Implantation of Neurostimulator Electrodes	3,898	22.4%
Level I	369	0.5%
Level II	3,529	24.7%
Discography	3,260	54.7%
Implantation of Neurological Device	1,704	25.2%
Level I Fluoroscopy	18,853	15.1%
Other Services	3,072043	0.9%
Total Services	4,122,236	4.7%

However, by linking the transaction-level file to the financial data in the Annual Utilization Report, we were able to examine whether profitability, which we define as the ratio of revenue to expenses, is related to WC patient load. Across the 296 ASC facilities that had at least one WC patient, we found substantial variation in WC patient load in 2005 (Table 10). The average WC load was 15.1% and the median was 6.7 percent. In comparison, the average WC patient load in hospital ambulatory surgery settings was 4.2 % and the mean was 1.8% (data not shown). Sixty-four ASCs had WC patient loads greater than 20%. These are the facilities that would have been most affected by the changes in the OMFS. We found no linear relationship among the ASC facilities with respect to WC load and the ratio of revenue to expenses. In other words, we did not find evidence that profitability was related to the proportion of an ASC's patient encounters for WC patients.

Table 10 Distribution of WC Encounters
as Percent of Total Encounters in ASCs

% WC Encounters	Number of ASCs
< 10 %	182
10 < 20%	50
20 < 30%	16
30 < 40%	15
40 <50 %	9
≥ 50%	24
	296
Mean	15.1
Median	6.8

In a separate study funded by the U.S. Department of Health and Human Services, RAND researchers compared the relative costliness of ASC and hospital outpatient facility services using the OSHPD data.[11] Their preliminary findings suggest California ASCs costs were 66-71% of estimated HOPD costs in 2008, depending on whether professional contract expenses are included in the ASC cost measure. Multi-specialty California ASCs had higher costs than single-specialty ASCs, but the differences were slight.

Summary of Key Findings and Discussion

Key findings from our analysis of the OSHPD data for 2005-2007 include the following:

- Over the two year period, total maximum allowable facility fees for ambulatory surgery increased 16 percent despite an eight percent decline in the number of encounters.

[11] Wynn et al., 2008. In reporting their findings in a working paper, the authors caution that the results should be considered preliminary and exploratory. Their comparison was between the Medicare OPPS conversion factor and the average ASC expense per relative weight unit for all patients.

- There were no major changes in the types and distribution of ambulatory surgical procedures. In 2007, nerve injections accounted for 30% of the procedures and 10% of the allowable fees. Arthroscopy procedures accounted for 29% of the procedures and 46% of the allowable fees.
- There was a slight increase in the proportion of surgical procedures performed in ASCs. In 2007, about 69 percent of ambulatory surgical procedures for WC patients were performed in ASCs (compared to 66 percent in 2005) and 31 percent were performed in hospitals. In contrast, 59 percent of the surgical procedures performed on the non-WC comparison group were done in hospitals.
- With the exception of nerve procedures, relatively few "office based" procedures are performed on WC patients in the ambulatory surgery facilities. Further, few "inpatient only" procedures are performed in ambulatory surgery facilities.
- ASCs are more reliant on WC patients than hospitals for ambulatory surgery but there is no linear relationship between WC reliance and profitability. Overall, ASCs have lower costs than hospitals.

Our findings raise several concerns that warrant further consideration.

- Major changes have been implemented in the Medicare payment system for ASC procedures that may merit consideration for adoption under the OMFS. Consistent with the Labor Code, the OMFS allows the same fees for surgical services provided in hospital and ASC settings. Under the revised Medicare payment system, most ASC services are paid under a system that parallels the payment system for hospital outpatient services but at a lower rate (about 67 % of the hospital rate). For procedures that are commonly performed in a physician office, the ASC payment rate is capped at the non-facility practice expense payment amount in the physician fee schedule. The Medicare policies link payment levels to differences in the cost of providing services and reduce financial incentives to shift services from physician offices to ASCs.

- The availability of OSHPD data for both inpatient and ambulatory surgical services provides an opportunity to compare for the WC and non-WC population the incidence with which certain procedures are performed in inpatient versus ambulatory facility settings. Further, the Workers' Compensation Information System started collecting medical data for services provided on or after September 2006. This database may facilitate bringing procedures performed in physician offices into the comparisons.

- The estimated allowable fees using the OSHPD data for ambulatory surgery suggest that the Workers' Compensation Insurance Rating Bureau (WCIRB)'s estimate of payments to hospitals for services impacted by the OMFS for outpatient facility fees may be overstated. This issue is discussed in the Appendix to this paper. The savings estimate does not have current policy implications because WCRIB uses actual medical expense data to develop its advisory pure premium rates. However, it would be important to establish an accurate baseline if further OMFS changes are made in the future.

Appendix

Purpose: Compare the WCIRB Estimate of Hospital Expenditures and RAND's Estimate of Maximum Allowable Fees for Hospital Services

Background:

The Workers' Compensation Insurance Rating Bureau is a private non-profit association of all companies licensed to transact California workers' compensation insurance in California. Among the functions the WCIRB performs is to collect premium and loss data on every workers' compensation insurance policy. This information is used to produce advisory pure premium rates that are used as a benchmark by workers' compensation insurance companies. Using data gathered from an annual Call for California Workers' Compensation Calendar Year Experience and Aggregate Indemnity and Medical Costs Call, WCIRB also publishes an annual report on insurer losses and expenses. At the request of the Insurance Commissioner, WCRIB developed plans to monitor the cost impacts of the recent reform provisions. Of particular interest to our study are two items:

- The *2006 Workers' Compensation Losses and Expense Report* (released June 17, 2007) [12] contains updated information for 2005 payments to hospitals. According to this report, 2005 payments to hospitals by WC insurers, including estimated payments made by the California Insurance Guarantee Association (CIGA) totaled $961 million. Payments made to hospitals by self-insured employers are not included in this estimate. In 2005, the number of workers for self-insured employers was about 30 percent of the number of workers for employers with WC insurance. [13]
- The *2008 Legislative Cost Monitoring Report* (released October 9, 2008) [14] provides a retrospective analysis of the savings attributable to various reform provisions. The report estimates the pre-reform annual baseline for services affected by the OMFS expansion outpatient facility fees was $1.9 billion in hospital (and ASC) payments. The expense data used for this estimate was aggregate hospital payment information that did not separately identify inpatient

[12] Available at https://wcirbonline.org/wcirb/resources/data_reports/pdf/2006_loss_and_expenses.pdf as of 12/12/08.

[13] According to the CHSWC 2007 annual report, employers with WC insurance in 2005 had 14.99 million employees on their payroll compared to 2.813 private self-insured employers and 1.685 public self-insured employers (the average of the 2004/05 and 2005/06 fiscal years). The report is available at www.dir.ca.gov/CHSWC/Reports/AnnualReport2007.pdf as of 12/08/08.

[14] Available at https://wcirbonline.org/wcirb/resources/data_reports/pdf/2008_cost_monitoring_report.pdf) as of 12/12/08.

payments, outpatient payments for ambulatory surgery and emergency department services and payments for other hospital outpatient services that were subject to the OMFS for physician services. Lacking information on the various components of hospital payments, WCIRB estimated 60 percent of hospital payments were for inpatient services and 40 percent were for outpatient services (without distinguishing between those affected by the OMFS fee schedule changes from other outpatient services). Based on an analysis by the California Workers' Compensation Institute (CWCI), WCRIB estimated the savings to be 39 percent of the outpatient baseline. For the ultimate incurred losses for Accident Year 2004, this reduced total expenditures by $700 million, leaving an incurred Accident Year 2004 baseline of $1.2 billion in outpatient facility fees before consideration of utilization changes. Using a sample of 2004 medical bills for services subject to the outpatient facility maximum allowable fees, the CWCI study had compared for the difference between an inflation-adjusted average facility fee payment in 2001 and the 2004 payment and found the average difference was 39 percent.

As part of its effort to evaluate the impact of the recent reforms for CHSWC, the RAND research team has modeled the maximum allowable fees for three types of facility services using the 2005 OSHPD data:

- Inpatient, $462 million
- Ambulatory surgery, $233 million
- Emergency department, $20 million

The total estimated allowances, $715 million, are considerably less than the 2005 total hospital payments in the WCIRB report. The purpose of this appendix is to explore potential explanations for the differences.

Discussion:

Table 1 summarizes the estimated expenditures for hospital services by component after adjusting for differences in the WC population covered by the two data sources. Column A summarizes the WCRIB annual expenditure data for 2005. For purposes of this discussion, we applied the 60/40 split between inpatient and outpatient used in the legislative monitoring report to the WCIRB annual expenses and, consistent with that report, assumed that all outpatient expenses are subject to the OMFS for outpatient facility fees.

Column B estimates total system-wide expenses by adjusting WCIRB-insured only expenses for estimated WC medical expenses for employees of self-insured employers. Self-insured employer payroll is 30 percent of employers with WC insurance. We estimated total system-wide expenses by multiplying the insured-only expenses by 1.30. Because Column C also represents system-wide expenditures, the difference between Columns B and C is primarily of interest.

Table A1 Comparison of WCIRB and RAND Estimates for Hospital Payments

	(A) WCIRB-Insured Only Expenses	(B) WCIRB Expenses Adjusted for Self-Insured	(C) RAND Estimated Allowances
Inpatient	$577 million	$750 million	$462 million
Outpatient	$384 million	$499 million	
Facility	$384 million	$499 million	253 million
Other			----
Total	$961 million	$1249 million	$715 million

One reason why the WCIRB expenditures are higher than the RAND estimate is the WCRIB estimate includes all payments to hospitals regardless of the type of service. In contrast, the RAND estimate includes allowances only for the facility component of hospital inpatient services, ambulatory surgery, and emergency department services. For example, the "other" category for outpatient services includes allowable fees for services provided by hospitals and ASCs that are subject to the OMFS for physician services. It includes clinic visits and the technical component of diagnostic tests and medical services. It may also include other payments to hospitals for non-facility services, such as payments for hospital-based physician professional services. Transaction-level data are not currently available to the RAND team that would allow us to estimate these expenses. Therefore, we are unable to estimate the proportion of hospital payments that might be categorized as non-facility payments.

Another potential reason might be an under-reporting of WC cases in the OSHPD data. It is possible that WC may not have been identified as the expected payer for some cases at the time the transaction-level data were reported to OSHPD so that the RAND estimate of WC hospital payments is understated. We are not aware of a comprehensive database that would allow us to evaluate the completeness of the OSHPD data for WC cases.

With regard to the WCIRB savings estimate for the expansion of the OMFS to outpatient facility fees, the 60/40 split used by WCIRB to separately estimate inpatient and outpatient expenses appears reasonable. RAND's simulation of total OMFS allowances indicates a 63/37 split before accounting for the "other" category under outpatient expenses. However, the savings estimate appears to be substantially overstated because the aggregate payment estimate for hospital outpatient services contains payments to hospitals that are not hospital facility services subject to the OMFS. CWCI developed the 39% savings from looking at the difference between pre- and post-OMFS payments for services that became subject to the OMFS. WCIRB applied the CWCI estimate to 40 percent of aggregate payments to hospitals instead of an estimate of outpatient payments attributable to services that would come under the OMFS.

In summary, there are substantial differences in the two estimates that cannot be reconciled with available data. Accurate categorization of expenses by type of service is

important not only for evaluating the impact of the recent reforms but also for estimating the potential impact of future refinements to the WC medical treatment system. As a first step in understanding the difference between the two estimates n future work, the RAND research team will explore using medical data reported to the Workers' Compensation Information System to examine the difference between hospital payments and payments for hospital facility services. This system was operational for medical expenses occurring on or after September 2006 but there are a number of data reporting issues that need to be examined before it can be used to generate aggregate estimates of medical expenditures.