WORKING
PAPER

Inpatient Hospital Services

An Update on Services Provided Under California's Workers' Compensation Program

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WR-629-CHSWC

January 2009

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

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PREFACE

This working paper updates findings from earlier RAND studies pertaining to inpatient hospital services provided under the California workers' compensation (WC) system.[1] In particular, the paper examines changes in the number and type of discharges and maximum allowable fees under the Official Medical Fee Schedule (OMFS) for inpatient hospital services from 2003- 2005 and discusses issues that might warrant refinements in the OMFS. In future work, we will examine the cost and utilization of inpatient hospital services under the WC program through 2007. These interim findings should be of interest to policymakers and others involved in the medical care payment and quality of care issues under California's WC 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 ambulatory surgery services furnished to WC patients in 2005. 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.

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[1] Wynn, Barbara O. Adopting Medicare Fee Schedules: Considerations for the California Workers'Compensation Program, Santa Monica, CA: RAND, MR-1776-ICJ, 2003. Wynn, Barbara O. and Giacomo Bergamo, *Payments for Burn Patients under California's Official Medical Fee Schedule for Injured Workers* Santa Monica, CA: RAND WR-263-1-ICJ, 2004. Wynn, Barbara O. and Giacomo Bergamo *Payments for Hardware Used in Complex Spinal Procedures under California's Official Medical Fee Schedule for Injured Workers*. Santa Monica, CA: RAND WR-301-ICJ, 2005.

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SUMMARY

This working paper examines changes in the number and type of discharges and maximum allowable fees under the California Workers' Compensation (WC)Official Medical Fee Schedule (OMFS) for inpatient hospital services from 2003-2005. The paper is part of an on-going study evaluation the impact of the changes in Labor Code provisions affecting medical care provided injured workers. The study's final report will include an analysis of inpatient data through 2007 and integrate the inpatient findings with findings from an analysis of ambulatory surgery data from 2005 (the first year such data are available from OSHPD) - 2007.

Effective January 2004, the OMFS was revised to provide for annual updates for acute care inpatient stays based on the Medicare payment system with an additional pass-through for the cost of devices and instrumentation used during complex spinal surgery. In the aggregate, OMFS allowances are limited to 120 percent of Medicare payments for comparable services. The OMFS was also expanded to include facility fees for ambulatory surgery (without a pass-though for spinal hardware). The Labor Code required that specialty hospitals become subject to the OMFS effective January 1, 2005; however, this provision has not been implemented. In addition to the OMFS changes, other significant changes were made during the study period with potential impacts on the utilization of inpatient hospital services. These included the adoption of medical treatment guidelines as presumptively correct medical treatment (effective March 23, 2004) and the requirement that injured workers of employers with medical provider networks use network providers throughout the course of their treatment (effective January 1, 2005).

The analyses reported in this paper use transaction-level data on WC hospital discharges during 2003-2005 available from the California Office of Statewide Health Planning and Development (OSHPD). Key findings include the following:

- There was a 9.6% decrease in the number of WC inpatient hospital stays. While the number of stays declined, the mix of inpatient stays remained relatively stable. The changes in the volume and mix of inpatient services are attributable to a number of factors and cannot be attributed directly to the legislative changes affecting hospital inpatient care.
- The estimated payment per discharge increased 5.0 percent. However, the increase would have been higher if the OMFS had not been updated. The 2004 OMFS revisions increased the allowances for acute care stays, but these higher allowances were more than offset by the elimination of the OMFS exemptions for certain high cost stays in acute care hospitals.
- The combination of the decrease in discharges and increase in average payment resulted in an estimated 5.1 reduction in aggregate payments. Actual payment information is not available in OSHPD data. The estimate assumes payment levels consistent with the OMFS allowances for acute care hospital stays and at 90 percent of charges for OMFS-exempt stays. Because hospital charges are substantially higher than costs, payers may have contracted with hospitals to pay for exempt services at a lower rate.
- The overall estimated average payment-to-cost ratio for acute care inpatient stays was 1.09 in 2005. It is likely to increase beginning in 2008 with Medicare refinements to better account for difference in patient severity in determining payment.
- In 2005, charges for WC stays in specialty hospitals totaled $67 million. Stays in rehabilitation hospitals and units of acute care hospitals accounted for nearly $49 million of this amount.

The paper raises several concerns that warrant monitoring and consideration of changes in OMFS policies. The Administrative Director of the Division of Workers' Compensation has discretionary authority that could be used to address most of these issues.

- There is wide variation in the payment-to-cost ratios across different types of acute care stays that could adversely affect the provision of appropriate inpatient care. This issue should be re-

examined after the Medicare severity refinements are fully implemented. The AD has authority to adjust fees within an aggregate limit.

- The pass-through for the cost of hardware used during complex spinal surgery is problematic and should be re-evaluated. The average payment-to-cost ratios for inpatient stays affected by this provision are higher than average *before* the pass-through payments are taken into consideration. There are also inconsistencies in the Labor Code regarding which surgical procedures are "complex" and eligible for the pass-through. Further, the pass-through creates an incentive to shift less complex spinal surgeries from outpatient to inpatient settings.
- The Medicare-severity refinements should improve payment accuracy; however, they may also lead to unwarranted payment increases caused by coding improvement rather than a real change in patient mix. If warranted, the AD's authority to adjust the OMFS allowances within the overall 120 percent of Medicare limit could be used to adopt a lower percentage add-on to account for the effect of coding improvements.
- Because hospital charges are substantially higher than costs, payors are at risk for unnecessary expenditures as long as specialty hospitals- particularly rehabilitation facilities - remain exempt from the OMFS. The AD has authority to adopt Medicare-based fee schedules for specialty hospitals; however, further analysis is needed to determine whether the Medicare methodologies are appropriate for the WC patient population. Also, the administrative burden of expanding the OMFS to small-volume specialty hospitals may outweigh potential cost savings.

ACKNOWLEDGEMENTS

The work represented in this working paper as well as the larger project evaluating the impacts of the recent legislative changes on medical care provided under California's workers' compensation program 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.

I would like to thank Susan Polich and Molly Scott, former RAND colleagues, who provided the programming support for the analyses. I would also like to thank my RAND colleagues, Susan Gates and John Mendeloff, who commented on an earlier draft of this paper and Courtney Myers for her assistance in preparing this version of the paper.

GLOSSARY, LIST OF SYMBOLS, ETC.

Symbol	Definition
AD	Administrative Director
ASC	ambulatory surgical center
CAH	critical access hospital
CCs	co-morbidities and complications
CHSWC	Commission on Health, Safety and Workers' Compensation
CMG	case mix grouping
CMI	case mix index
CMS	Centers for Medicare and Medicaid Services
DRG	diagnosis-related group
DSM	Diagnostic and Statistical Manual of Mental Disorders
IDC-9-CM	International Disease Classification, 9th Revision, Clinical Modification
IRF	inpatient rehabilitation facilities
MDC	Major Diagnostic Category
MS-DRG	Medicare-Severity Diagnosis-related Group
OMFS	Official Medical Fee Schedule
OSHPD	Office of Statewide Health Planning and Development
PTC	payment-to-cost
WC	workers' compensation

1. INTRODUTION

BACKGROUND

Payors (insurers and self-insured employers) under California's Workers' Compensation (WC) program generally pay for medical services provided 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 a variety of medical services. The OMFS amounts apply unless the payor and provider have contracted for a different price.

The OMFS for inpatient hospital care is adapted from the Medicare payment system for inpatient services furnished by acute care hospitals. A pre-determined maximum allowable fee is established for each admission based on the diagnosis-related group (DRG) to which the patient is assigned. The DRG assignment takes into account factors such as the patient's principal diagnosis, co-morbidities and complications (CCs), and surgical procedures. Each DRG has a relative weight reflecting the average resources or costs for Medicare patients assigned to the DRG relative to Medicare patients in other DRGs. The OMFS standard allowance for a discharge is determined as the product of a facility-specific composite rate[2] x DRG relative weight x 1.20. Additional allowances are made for discharges with atypically high costs and for the cost of hardware used in complex spinal surgery.

The OMFS for inpatient hospital services has been based on the Medicare fee schedule since 1999; however, regular updates did not occur until the provisions of SB 228 (Alarcón, 2003) were implemented effective January 1, 2004. Other SB 228 OMFS provisions:

- Eliminated existing exemptions for certain types of cases: psychiatric and rehabilitation care unless provided in a special unit or specialty hospital, burn, trauma, tracheostomy, and life-threatening inpatient care provided by Level I and II trauma hospitals.

[2] The composite rate is a hospital-specific rate based on the Medicare standard payment rate adjusted for geographic differences in wages and, if applicable, the hospital's additional payments for teaching and serving a disproportionate share of low-income patients.

- Eliminated an adjustment factor that applied to certain DRGs to either increase or decrease the payment relative to 120 percent of what Medicare would pay for the discharge.
- Limited a pass-through for the costs of "hardware" (implanted devices and instrumentation used during back and neck surgeries) to only hardware used during complex spinal surgeries.
- Effective January 1, 2005, eliminated the exemption from Medicare-based fee schedules for hospitals that are not paid under the Medicare payment system for acute care hospitals. As discussed below, this provision has not yet been implemented; therefore specialty hospitals, including psychiatric and rehabilitation facilities, remain exempt from the OMFS.

SB 228 also established an OMFS for the facility component of hospital outpatient services and ambulatory surgical center (ASC) services. [3] At the time, concern was raised that the OMFS for hospital outpatient surgery might create an incentive to shift surgical services from ambulatory settings to the hospital inpatient setting. The concern was raised in particular with respect to complex spinal surgeries where the allowable fees for spinal hardware are treated differently depending on where the surgery is performed. Hardware implanted during these procedures is included in the hospital outpatient/ASC OMFS allowances but is separately paid for under the OMFS for inpatient services. This could create a financial incentive to shift these procedures to the inpatient settings.

In addition to these OMFS changes, other provisions in SB 228 and SB 899 (Poochigan, 2004) affected medical care provided under the California workers' compensation program. The most notable changes with potential impact on the utilization of inpatient hospital services were to:

- Adopt medical treatment guidelines as presumptively correct medical treatment (effective March 23, 2004). Previously,

[3] The OMFS for physician and other practitioner services applies to the technical component of diagnostic tests.

the medical decisions of the primary treating physician were presumptively correct.

- Require that injured workers of employers with medical provider networks use network providers throughout the course of their treatment (effective January 1, 2005). If the employer does not have a medical provider network, the prior rules that allow the employer to control provider choice for the first 30 days and permit the injured worker to choose the primary treating physician after 30 days remain in effect.
- Establish new standards for utilization processes (effective December 13, 2004).
- Create a second opinion program for spinal surgery (effective December 15, 2004).

STUDY QUESTIONS

The work described in this paper examined changes in the volume and mix of inpatient hospital services over the 2003-2005 period and the impact of the OMFS revisions on payments for inpatient hospital services. The major questions explored with respect to acute care hospital services were:

- What changes occurred in the volume and distribution of inpatient stays for workers' compensation patients between 2003 and 2005? The changes in the volume and mix of inpatient services are attributable to a number of factors and cannot be attributed directly to the legislative changes affecting hospital inpatient care.
- What changes occurred in the allowances for acute inpatient hospital services? The changes from 2003-2005 resulting from changes in volume, the mix of services, and the OMFS revisions can be separately determined.
- What has been the effect of the OMFS changes on allowances for inpatient hospital services? By modeling the allowances before and after the implementation of the OMFS revisions, the payment effect of the OMFS changes can be isolated from the changes in volume and mix of services. This modeling

assumes that the OMFS changes did not affect the volume and mix of services.

- How do the estimated OMFS allowances compare to the estimated costs for inpatient stays? On average, the OMFS allowance should cover the estimated cost of an inpatient stay and provide a reasonable profit. Inadequate allowances could create problems in access to appropriate care while excessive allowances add unnecessary program costs and could create incentives for the provision of medically unnecessary inpatient care.
- What is the volume and type of care provided by both freestanding hospitals and units of acute care hospitals that are currently exempt from the OMFS and what are the payment implications of continued exemption for these hospitals?

ORGANIZATION OF WORKING PAPER

The remaining chapters of this working paper are organized as follows:

Chapter 2 discusses the data, methods, and limitations of our analysis of the study questions.

Chapter 3 presents an overview of the volume, mix, and estimated payments for inpatient hospital services for 2003-2005. The information includes both stays in acute care hospitals subject to the OMFS and stays in specialty hospitals that are OMFS-exempt.

Chapter 4 provides the results from the analysis of discharge from acute care hospitals.

Chapter 5 provides the results from the analysis of discharges from specialty hospitals that are exempt from the OMFS.

Chapter 6 summarizes the key findings and issues that warrant further analysis and consideration of refinements in the OMFS.

2. DATA AND METHODS

The analyses in this paper use administrative data obtained from the California Office of Statewide Health Planning and Development (OSHPD) from 2003-2005. These transaction-level data for each hospital discharge include a hospital identifier, the expected payer, the principal diagnosis and up to 24 secondary diagnoses, the principal procedure and up to 24 additional procedure codes, DRG assignment, total charges, length of stay, and discharge destination. Composite rate data and other information available from the DWC website was used to estimate maximum allowable fees under the OMFS and the hospital's costs for each discharge exclusive of any pass-through amounts for spinal hardware. Actual payment amounts are not available from the OSHPD data.

To identify the changes that have occurred in the volume and distribution of inpatient stays for workers' compensation patients, the number of discharges whose expected payer is reported to be workers' compensation by DRG across the three years was compared. Changes in the average case mix index (CMI, or average DRG relative weight) were also examined. The Medicare program makes annual refinements to the rules used to assign patients to DRGs. To control for these changes, discharges from 2003 and 2004 were cross-walked into their 2005 equivalent DRGs. By using the same DRGs across all three years, the changes in the distribution of patients is largely attributable to real changes in DRG assignment rather than DRG refinements. Most but not all discharges could be cross-walked.

To estimate the impact of the SB 228 OMFS provisions, the maximum allowable fees using the OMFS rates in effect when the patient was discharged from the hospital were first determined. In identifying exempt inpatient stays, the exemption for life-threatening conditions treated in Level I and Level II trauma centers was not accounted for. As a result, the number of inpatient stays that were OMFS-exempt prior to January 1, 2004 are understated. Any hospital for which a composite rate did not exist in 2003 was assumed to be OMFS-exempt. This includes both new acute care hospitals and specialty hospitals that are exempt from the Medicare PPS for general acute care hospitals. For hospitals and

DRGs that were exempt from the OMFS, payment was assumed to be 90 percent of charges. There are several limitations to this approach.

- It assumes that payments were made at the OMFS maximum allowable fee amounts; payers and hospitals may have agreed to a different payment rate.
- The relationship between charges and actual payments for discharges that were exempt from the OMFS is not known. Charges are substantially higher than costs, and payers may have negotiated more than a 10 percent discount on charges for services that were exempt from the OMFS.[4]
- It does not account for the additional payments for hardware used during spinal and back surgeries in 2003 and during complex spinal surgeries in 2003-2005.
- It does not account for the 2003 OMFS exemption for life-threatening conditions.

To isolate the payment changes attributable to the OMFS changes from changes in the volume and mix of services, an average rate per discharge was computed and divided by the average CMI for each analysis year. This standardized payment per discharge was used to estimate the impact of the OMFS changes. A limitation of this approach is that it assumes that the fee-schedule changes did not affect the volume and mix of services.

To compare the estimated OMFS allowances to the estimated costs for inpatient stays, aggregate payment-to-cost ratios for 2005 discharges by DRG and across all discharges were estimated. Costs were estimated by applying the most recent available overall inpatient cost-to-charge ratio from Medicare cost reports (which typically included at least a portion of 2005) to the charges for each inpatient stay. The limitations noted above for estimating payments apply to this analysis. Another limitation is that this approach assumes that charges are consistently related to costs. There is considerable evidence that cost-

[4] Across acute care hospital stays, the estimated average cost-to-charge ratio for WC stays was .23 in 2005. In other words, charges were more than 4 times the estimated cost for the stay. This estimate was developed by applying the overall cost-to-charge ratio for Medicare inpatient stays from 2005 cost reports to the WC OSHPD records.

to-charge ratios vary by department and within department. Costs of medical DRGs tend to be understated and costs of surgical DRGs tend to be overstated. However, the OSHPD data do not provide information on departmental-level charges for each inpatient stay that would allow a more refined estimate.

3. OVERALL CHANGES IN DISTRIBUTION OF WC DISCHARGES AND ESTIMATED PAYMENTS

Table 3.1 shows the total number of WC inpatient stays and the estimated payments for inpatient services in 2003-2005. The total number of discharges fell 9.6 percent over the period from 30,467 in 2003 to 27,542 in 2005. Because the number of injuries involving days lost from work declined nearly 20 percent over the same period, the reduction in WC stays is not unexpected. [5] Arguably, given the fewer injuries with time lost from work and the implementation of the ACOEM guidelines, one might have expected a greater decline. Reflecting the lower volume of WC inpatient stays, estimated total payments for inpatient hospital services were 5.1 percent lower in 2005 than 2003. There was a 5.0 percent increase in the estimated payment per discharge over the period.

Table 3.1
Number of Discharges and Estimated Payments for WC Hospital Inpatient Discharges 2003-2005

	2003	2004	2005	2-YR Change
Discharges	30,467	29,231	27,542	-9.60%
Estimated Payments(000s)	$487,005	$466,904	$462,331	-5.10%
Estimated Payment Per Discharge	$15,985	$15,973	$16,786	5.00%

Table 3.2 shows the distribution of estimated payments according to our estimation method. About 68 percent of payments for inpatient hospital services were subject to the OMFS allowance in 2003 compared to 84 percent or more in 2004 and 2005. The reduction in the OMFS-exempt payments is primarily attributable to the elimination of exemptions for particular types of cases (e.g, tracheostomies, burns) and an updating of the composite rate listing for new hospitals. The exemptions for select DRGs and for acute care hospitals without a composite rate accounted for about $76.5 million and $3 million, respectively, of the estimated $156 million in estimated OMFS-exempt payments in 2003. As

[5] According to the Division of Labor Statistics, the total number of injuries involving days lost from work were: 2003, 223,500; 2004, 201,400; and 2005, 179,400.

will be seen in the next section, the elimination of the exemptions for high cost acute care hospital services contributed to the decline in estimated payments for inpatient care.

Table 3.2
Distribution of Estimated Payments by OMFS Status, 2003-2005

Year	OMFS Allowances (000s)	% of Total	OMFS-Exempt (000s)[1]	% of Total	Total Estimated Payments (000s)
2003	$331,144	68.00%	$155,861	32.00%	$487,005
2004	$394,268	84.80%	$72,637	15.20%	$466,904
2005	$389,395	84.10%	$72,936	15.90%	$462,331

Payments estimate based on 90% of charges.

Table 3.3
WC Inpatient Stays Accounting for At Least One Percent of Estimated Payments for Inpatient Hospital Care, 2003-2005

Description	2003		2004		2005	
	Payment (000s)	% of Total	Payment (000s)	% of Total	Payment (000s)	% of Total
Spinal Fusion Except Cervical	$67,791	13.9%	$63,842	13.8%	$65,455	14.2%
Major Joint & Limb Reattachment Procedures of the Lower Extremity	$29,896	6.1%	$36,769	8.0%	$40,030	8.7%
Rehabilitation	$42,749	8.8%	$38,960	8.4%	$39,594	8.6%
Combined Anterior/Posterior Spinal Fusion	$43,227	8.9%	$43,775	9.5%	$33,238	7.2%
Cervical Spinal Fusion	$24,465	5.0%	$28,545	6.2%	$28,136	6.1%
Back & Neck Procedures except Spinal Fusion	$23,342	4.8%	$25,164	5.4%	$25,767	5.6%
Tracheostomy excluding Principal Diagnoses of the Face,Mouth, & Neck	$37,882	7.8%	$14,010	3.0%	$12,936	2.8%
Lower Extremity & Humerus Procedures except Hip,Foot,Femur	$10,195	2.1%	$11,312	2.4%	$12,125	2.6%
O.R. Procedure For Infectious & Parasitic Diseases	$4,393	0.9%	$9,761	2.1%	$8,594	1.9%

Description	2003 Payment (000s)	2003 % of Total	2004 Payment (000s)	2004 % of Total	2005 Payment (000s)	2005 % of Total
Wound Debridement & Skin Graft Except Hand, for Musculoskeletal & Connective Tissue Disorders	$6,557	1.3%	$8,533	1.8%	$8,280	1.8%
Other O.R. Procedures For Multiple Significant Trauma	$4,952	1.0%	$6,862	1.5%	$7,151	1.5%
Local Excision & Removal Of Internal Fixed Devices Except Hip & Femur	$5,437	1.1%	$7,892	1.7%	$7,100	1.5%
Medical Back Problems	$5,863	1.2%	$7,266	1.6%	$6,642	1.4%
Psychoses	$9,389	1.9%	$9,465	2.0%	$6,001	1.3%
Major Shoulder/Elbow Procedures or Other Upper Extremity Proc	$5,817	1.2%	$5,514	1.2%	$5,029	1.1%
Percutaneous Cardiovasular Procedures With Drug Eluting Stent	$3,315	0.7%	$4,599	1.0%	$4,831	1.0%
Knee Procedures	$4,643	1.0%	$4,696	1.0%	$4,769	1.0%
Spinal Procedures	$5,181	1.1%	$4,973	1.1%	$4,553	1.0%
Hip & Femur Procedures Except Major Joint	$3,563	0.7%	$4,496	1.0%	$4,235	0.9%
Respiratory System Diagnosis With Ventilator Support	$6,692	1.4%	$2,708	0.6%	$4,064	0.9%
Full Thickness Burn	$10,994	2.3%	$4,095	0.9%	$3,869	0.8%
Extensive. Burns or Full Thickness Burn with Mechanical Ventilator of More than 96Hrs with Skin Graft	$9,347	1.9%	$2,626	0.6%	$3,844	0.8%
Other Inpatient Stays	$121,315	24.9%	$116,470	25.2%	$126,090	27.3%
All WC Inpatient Hospital Stays	$487,005	100 %	$462,331	100 %	$462,331	100 %

Table 3.3 summarizes the distribution of payments by type of inpatient stay across the three years. This table combines related DRGs that are differentiated solely based on the presence or absence of CCs or, in the case of some surgical DRGs, specific diagnoses. There were 22 groupings of inpatient stays that accounted for at least one percent of payments in one or more years. In the aggregate, these stays accounted for 73-75 percent of total estimated payments. Most high payment groupings in also account for a high percentage of total inpatient discharges (see Appendix A). Using the assumption that the OMFS-exempt

payments were based on 90 percent of hospital charges, several high cost inpatient groupings that were exempt in 2003 accounted for a much smaller percentage of estimated payments after they became subject to the OMFS. For example, the proportion of total estimated payments attributable to tracheostomies fell from 7.8 percent in 2003 to 2.7 percent in 2005 under the assumption. Most changes in relative proportion of payments are consistent with the changes in relative volume; however, the percentage of payments attributable to non-cervical spinal fusion increased slightly (from 13.9% to 14.2%) despite the decline in the proportion of stays accounted for by these stays.

4. ACUTE CARE HOSPITAL SERVICES

CHANGES IN ALLOWANCES FOR ACUTE CARE STAYS

Table 4.1 provides summary information on acute care hospital inpatient stays. In 2005, these stays accounted for 93 percent of WC hospital stays and 84 percent of estimated total payments. The two-year decline in acute care stays over the 2003-2005 period (8.8 %) was less than the overall decline in WC hospital stays (9.6%), so the proportion of inpatient stays in acute care hospitals increased slightly over the period. The total estimated OMFS allowances for acute care hospital services decreased 4.8 percent while the estimated allowance per discharge increased 4.3 percent. Using the 2005 DRG relative weights as a standard measure of resource use, the average case mix index declined slightly, suggesting that WC inpatients were somewhat less resource-intensive in 2004 and 2005 than in 2003.

Table 4.1
Number of WC Discharges and Estimated Payments for Stays in General Acute Care Hospitals, 2003-2005

	2003	2004	2005	2-Yr Change
Discharges	28,151	26,978	25,673	-8.8%
Estimated Payments (000s)	$409,224	$394,268	$389,387	-4.8%
Estimated Payment Per Discharge	$14,537	$14,614	$15,167	4.3%
Average Case Mix Index	1.764	1.757	1.724	-2.3%
Estimated Standardized Payment Per Discharge	$8,239	$8,319	$8,799	6.8%
Annual Increase in Estimated Standardized Payment Per Discharge		1.0%	5.8%	

After adjusting for case mix change, the increase in the estimated standardized payment per discharge is 6.8 percent over the two-year period. The increase in the standardized payment per discharge was 1.0 percent in 2004 when the SB 228 provisions were implemented. To gauge the financial impact of the SB 228 provisions, the payments that would have been made in 2004 using the composite rates and relative weights in

effect in 2003 (the pre-SB 228 rates) were simulated. Assuming that payments for the OMFS-exempt services would have been based on 90 percent of charges, payments would have been $4 million higher using the 2003 composite rates. Although the 2004 revisions increased the allowances for inpatient stays subject to the OMFS, these higher allowances were more than offset by the elimination of the OMFS exemptions and the extension of the OMFS to all general acute care inpatient stays.

The SB 228 revisions provide for regular updates in the OMFS composite rates for inflation and in the DRG relative weights to reflect changes in practice patterns and the use of new technology. The projected rate of increase in the hospital market basket index is used to update the OMFS composite rates for inflation. The hospital market basket index measures the rate of change in the prices hospitals pay for goods and services used in the provision of inpatient hospital care. After adjustment for case mix change, the estimated payment per discharge in 2005 increased 5.8 percent compared to a 3.3 percent rate of increase in the hospital market basket index (which was used to update the OMFS composite rates in 2005). The higher rate of increase in the estimated payment per discharge is largely attributable to changes in the DRG relative weights assigned to WC inpatient stays.[6]

SHORT-STAY CASES

As a general trend, one might expect the inpatient case mix index to increase over time. As technological improvements and advancements in anesthesia have increasingly allowed less complex services to shift to ambulatory settings, the average inpatient stay has become more resource-intensive and costly. However, this is not our finding in comparing the average case mix for WC patients between 2003-2005. The

[6] When we compared the actual 2004 relative weights for the DRGs to which WC patients were assigned in that year to the 2005 relative weights for the same DRGs, we found that the 2005 DRG relative weights were 1.5 percent higher on average than the 2004 relative weights. About half of this represents an across-the-board increase in DRG relative weights attributable to increases in Medicare case mix. The average relative weight for spinal fusions increased 3.8 percent.

2.3 percent reduction shown in Table 4.1 indicates that there was an increase in the proportion of relatively less costly cases receiving inpatient care. This finding is consistent with a shift of services from ambulatory to inpatient settings. Generally, inpatient stays for procedures that could have been performed on an outpatient basis would be lower-cost stays with a short length-of-stay.

Table 4.2
High Volume Inpatient Stays with at Least 20 Percent of Stays of 1 Day or Less

Description	2005 Discharges	2003	2004	2005
Back & Neck Procedures except Spinal Fusion	3,027	38.4%	42.9%	42.1%
Cervical Spinal Fusion	*1,871*	*32.2%*	*35.6%*	*36.0%*
Lower Extremity & Humerus Procedures except Hip,Foot,Femur	1,218	21.2%	23.5%	21.4%
Medical Back Problems	929	21.5%	23.7%	26.5%
Local Excision & Removal of Internal Fixed Device except Hip & Femur	705	32.0%	32.5%	35.0%
Major Shoulder/Elbow Procedures, or Other Upper Extremity Procedures	663	61.2%	55.6%	54.1%
Knee Procedures	414	35.0%	36.0%	36.2%
Major Thumb or Joint Procedures or Other Hand or Wrist Procedures	334	55.6%	52.5%	50.3%
Soft Tissue Procedures	325	48.9%	50.0%	47.4%
Hand Procedures for Injuries	293	51.9%	50.2%	48.1%
Percutaneous Cardiovascular Procedure with Drug-Eluting Stent	248	58.9%	57.8%	63.7%
Chest Pain	242	67.9%	68.9%	66.1%
Other O.R. Procedures for Injuries	238	31.3%	26.3%	28.6%
Spinal Procedures	*234*	*21.7%*	*30.0%*	*32.5%*
All Discharges	27,437	23.7%	24.3%	24.5%

If an ambulatory surgery facility is at risk for incurring a loss, the facility has an incentive to shift the procedure to the inpatient setting. One indication of a shift would be an increase in the proportion of short-stay inpatient cases. Table 4.2 shows the proportion of zero and one-day stays in each of the three years for selected high volume DRGs with at least 20 percent of discharges having stays of one-

day or less in 2005. The overall percentage of stays that were one day or less remained about the same - 24%. However, there were increases in two DRGs that benefit from the pass-through for spinal hardware (Cervical Spinal Fusion; Spinal Procedures) as well as other DRGs that might involve costly devices (Back & Neck Procedures except Spinal Fusion; Percutaneous Cardiovascular Procedures With Drug Eluting Stent) that might be indicative of a shift from outpatient to inpatient care. [7] These findings are not conclusive, in that other factors, such as technological improvements allowing earlier inpatient discharges, may explain the increase in proportion of one-day or less stays. Rather, the findings, which are from an analysis of inpatient data only, indicate a need to monitor the patterns of care. More conclusive information could be generated from a comparison of the relative proportion of particular services provided on an inpatient vs. outpatient basis over time. In future work, we will examine trends over the 2005-2007 period in the future. However, the pre-2005 ambulatory data needed to examine whether shifts occurred when the OMFS for ambulatory surgery was implemented are not available from OSHPD.

PAYMENT-TO-COST RATIOS

Table 4.3
2005 Estimated Payment-to-Cost Ratios for Acute Care Inpatient Services

Type of Inpatient Stay	Average OMFS Allowance	Estimated Average Cost	Payment-to-Cost Ratio
Spinal Fusion Except Cervical	$26,003	$25,290	1.03
Major Joint & Limb Reattachment Procedures of the Lower Extremity	$16,660	$16,111	1.03
Combined Anterior/Posterior Spinal Fusion	$49,136	$35,419	1.39
Cervical Spinal Fusion	$15,056	$14,618	1.03
Back & Neck Procedures except Spinal Fusion	$8,513	$9,204	0.92

[7] Non-cervical spinal fusions typically require more than a one-day stay and therefore are not listed in Table 4.2.

Type of Inpatient Stay	Average OMFS Allowance	Estimated Average Cost	Payment-to-Cost Ratio
Tracheostomy excluding Principal Diagnoses of the Face, Mouth, & Neck	$224,081	$169,130	1.32
Lower Extremity & Humerus Procedures except Hip,Foot,Femur	$9,962	$11,337	0.88
O.R. Procedure For Infectious & Parasitic Diseases	$31,948	$17,721	1.80
Wound Debridement & Skin Graft Except Hand, for Musculoskeletal & Connective Tissue Disorders	$28,461	$23,679	1.20
Other O.R. Procedures For Multiple Significant Trauma	$53,767	$48,880	1.10
Local Excision & Removal Of Internal Fixed Devices Except Hip & Femur	$10,036	$8,643	1.16
Medical Back Problems	$6,515	$5,460	1.19
Percutaneous Cardiovascular Procedures With Drug Eluting Stent	$19,410	$16,216	1.20
Major Shoulder/Elbow Procedures or Other Upper Extremity Proc	$7,458	$7,778	0.96
Spinal Procedures	$19,438	$15,815	1.23
Other WC Inpatient Stays	$17,820	$19,594.91	1.10
All WC Inpatient Stays	$14,096	$13,857	1.09

One measure of the adequacy of the OMFS allowances is to determine the ratio of payments based on the OMFS allowances to the estimated costs of WC stays. Table 4.3 summarizes this information for all 2005 WC inpatient stays in general acute care hospitals and by types of stays accounting for at least one percent of payments.[8] Overall, the estimated payment-to-cost ratio for 2005 was 1.09, indicating that estimated payments were 9 percent higher than estimated costs before

[8] The data for this table is based on only acute care general hospitals whose services are subject to the OMFS. In addition to specialty hospitals, inpatient stays in Kaiser hospitals are excluded because these hospitals to not report charges for inpatient stays and, as a result, the cost of the stays cannot be estimated. For this reason, there are differences between the estimated average payments reported in this table and earlier tables.

taking into consideration the pass-through payments for hardware used during complex spinal surgery.[9] However, there was substantial variation in the average payment-to-cost ratio by type of stay. Three types of surgical stays accounting for a significant portion of WC allowances had estimated payment-to-cost ratios of less than 1.0: back & neck procedures except spinal fusion (.92); lower extremity & humerus procedures except hip, foot, femur (.88); and, major shoulder/elbow procedures or other upper extremity procedures (.96). On average, the estimated allowances were less than the estimated costs for these inpatient stays. For some other types of inpatient stays, the payment-to-cost ratios indicate payments are substantially higher than estimated costs. For example, the estimated payment-to-cost ratio for combined anterior/posterior spinal fusion was 1.39, indicating that payments were 39 percent higher than estimated costs.

ESTIMATED IMPACT OF MEDICARE-SEVERITY DRGS

The Medicare program recently adopted Medicare-Severity DRGs (MS-DRGs) to incorporate better measures of severity into its patient classification system and improve payment accuracy.[10] The MS-DRGs are

[9] The 1.09 ratio is lower than RAND anticipated would occur with the implementation of the SB 228 OMFS provisions based on an analysis of 2000 OSHPD data (Wynn, 2003). A major reason for the decline in the payment-to-cost ratio is that hospital cost growth during 2000-2005 exceeded growth in the hospital market basket index by more than 2 percentage points per year. In contrast, the private payer payment-to-cost ratio grew rapidly during this period, largely because hospitals raised their charges by more than 10 percent each year to increase revenue for private payers based on discounted charges. The estimated private payer payment-to-cost ratio for inpatient hospital services grew from 1.13 in 2000 to 1.24 in 2005 (MedPAC, 2007).

[10] The MS-DRG system uses the CMS-DRGs (version 24.0) as the foundation for its grouping logic. The logic collapses any paired DRGs (DRGs distinguished by the presence or absence of complications or comorbidities (CCs) and/or age) into base DRGs and then splits the base DRGs into CC-severity levels. The general structure of the MS-DRG logic establishes three severity levels for each base DRG: With Major CC, With CC, and Without CC. However, CMS consolidated severity levels for the same base DRG if the severity levels were low volume, did not have a significant difference in average charges, or did not reduce charge variance at least three percent. Each discharge is assigned to the highest severity level of any secondary diagnosis. Generally, there is no adjustment in the severity-level for additional factors or CCs. However, discharges with no CC but certain high cost devices are

being phased-in over a two-year period. The first-year transition relative weights were incorporated into the OMFS effective January 1, 2008. To estimate the impact that the MS-DRGs will have on WC payments for acute care inpatient hospital services and payment-to-cost ratios, the 2005 discharges were assigned to MS-DRGs and compared the average relative weight using the 2005 CMS-DRG relative weights to the average 2009 MS-DRG relative weights.[11] Assuming no change in patient mix between 2005 and 2008, the changes in the patient classification system will increase the overall WC average DRG relative weight by 3.1 percent relative to the average DRG relative weight under the CMS-DRGs. Because the change in the relative weights has a direct impact on payment, the

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assigned to a CC severity level. In total, the MS-DRG version 26.0 has 335 base DRGs and 745 MS-DRGs.

A key Medicare requirement in adopting the MS-DRGs is budget-neutrality. The Medicare law authorizes CMS to maintain budget neutrality by adjusting the standard payment rate to eliminate the effect of changes in coding or classification that do not reflect real change in case-mix. The concern is that with the introduction of severity levels in DRGs that previously were not split into "no CC/CC" categories and the addition of a MCC severity level, hospitals would have an incentive to code CCs more completely. The result would be an increase in case mix and Medicare payments that was attributable to coding improvement rather than a "real" change in patient mix. To insure budget neutrality in adopting the MS-DRGs, the CMS Actuary calculated prospective adjustment factors to account for coding changes that could occur as a result of the MS-DRG system of -1.2 percent for FY 2008, -1.8 percent for FY 2009, and -1.8 percent for FY 2010. CMS's estimate for the budget neutrality adjustment was based on rates of increase in hospital case mix indices after Maryland adopted APR-DRGs in its rate-setting system. After the publication of the FY08 final rule for the IPPS, Congress enacted Public Law 110-90, which mandated that only half of the budget neutrality adjustment recommended by CMS be implemented for FY 2008 and for FY 2009. In addition, the law allowed for an adjustment in FY 2010 – FY 2012 to account for coding changes which may not have been accounted for in the Congressionally mandated adjustments.

[11] In making the comparison, we normalized the MS-DRG weights to remove the increase in the average Medicare DRG relative weight between the FY 2005 and FY2009 recalibration of the DRG relative weights. We did this to isolate the impact of the patient classification changes from the changes in the relative weights attributable to changes in Medicare patient mix. The Medicare average DRG relative weight used in the recalibration calculation increased 2.6 percent from fiscal year 2005 to fiscal year 2009. Without normalization, the average case mix index using the 2009 MS-DRG relative weights is 5.8 percent higher than the average case mix index using the 2005 CMS-DRG relative weights.

OMFS maximum allowable fees will also increase by approximately 3.1 percent in 2009 relative to what they would have been under the CMS-DRGs.

Table 4.4
Estimated Impact of the MS-DRGs: Percent Change in Average Relative Weight and Estimated Payment-to-Cost (PTC) Ratio

Description	Payments (000s)	Average Relative Weight 2005 DRGs	% Change MS-DRGs	Estimated PTC Using MS-DRGs
Spinal Fusion Except Cervical	*$65,455*	*2.9754*	*19.3%*	*1.23*
Major Joint & Limb Reattachment Procedures of the Lower Extremity	$40,030	2.0332	-0.2%	1.03
Combined Anterior/Posterior Spinal Fusion	*$33,238*	*5.8072*	*1.2%*	*1.41*
Cervical Spinal Fusion	*$28,136*	*1.7731*	*11.0%*	*1.14*
Back & Neck Procedures except Spinal Fusion	$25,767	1.0184	1.0%	0.93
Tracheostomy excluding Principal Diagnoses of the Face,Mouth, & Neck	$12,936	20.0414	-10.7%	1.18
Lower Extremity & Humerus Procedures except Hip,Foot,Femur	$12,125	1.1225	17.3%	1.03
O.R. Procedure For Infectious & Parasitic Diseases	$8,594	3.6291	-41.0%	1.06
Wound Debridement & Skin Graft Except Hand, for Musculoskeletal & Connective Tissue Disorders	$8,280	2.9339	-24.9%	0.90
Other O.R. Procedures For Multiple Significant Trauma	$7,151	4.7311	-14.0%	0.95
Local Excision & Removal Of Internal Fixed Devices Except Hip & Femur	$7,100	1.1811	2.4%	1.19
Medical Back Problems	$6,642	0.7712	-0.2%	1.19
Major Shoulder/Elbow Procedures or Other Upper Extremity Proc	$5,029	0.8977	13.2%	1.09
Percutaneous Cardiovasular Procedures With Drug Eluting Stent	$4,831	2.4668	-50.3%	0.60
Spinal Procedures	*$4,553*	*2.0250*	*2.1%*	*1.26*
All WC Inpatient Hospital Stays	$462,331	1.6544	3.1%	1.12

The payment-to-cost ratios shown in Table 4.3 are adjusted by the percentage change in the base DRG relative weights. Using the base DRG Spinal Procedures except Cervical Fusion as an example, the 2005 estimated payment-to-cost ratio of 1.03 was increased by 19.3 percent

(1.03 x 1.193). The resulting payment-to-cost ratio is 1.240 (Table 4.4). The overall payment-to-cost ratio for all WC discharges increases from 1.09 to 1.12. Most base DRGs that had below average payment-to-cost ratios in 2005 have higher payment-to-cost ratios using the MS-DRGs. However, other base DRGs have substantial reductions in the relative weights that will reduce their estimated average payment-to-cost ratios below 1.0. Most notably, the average relative weight discharges assigned to base DRG Percutanous Cardiovascular Procedures with Drug Eluting Stent will decrease 50 % as a result of the DRG refinements, decreasing the estimated the payment-to-cost ratio from 1.20 to .60. The average relative weight for base DRG Back and Neck Procedures increases 1% with the estimated payment-to-cost ratio remaining below 1.0.

A concern in implementing MS-DRGs is that the incentives for more complete and accurate diagnostic coding may lead to increases in the case mix index that do not reflect actual changes in patient mix. The case-mix information presented in Table 4.4 assumes no changes in coding behavior. However, Medicare's experience has been that each time the payment system has changed to consider new factors in the DRG logic, providers have responded by improving their coding of these factors in order to optimize payments. Thus, the case-mix-change and payment-to-cost ratio estimates presented in Table 4.4 are likely to be understated because of coding improvement. The Medicare law requires that the changes in the patient classification system be budget neutral, or in other words, not affect aggregate Medicare payments. To insure budget neutrality, Medicare's update factor to the standard payment rate will be adjusted in federal fiscal years 2008-2012 to eliminate the effect of coding changes that do not reflect real case mix change. The Labor Code stipulates that the OMFS composite rates be updated by the estimated increase in the hospital market basket and does not provide for policy adjustments to the inflation factor such as the one Medicare will be making for coding improvement.

PASS-THROUGH FOR COMPLEX SPINAL SURGERY

In the past, concerns have been expressed over the appropriateness of continuing to pass-though costs for hardware used during complex spinal surgery. An earlier RAND working paper found that the pass-

through is unnecessary to assure payments are adequate for workers' compensation spinal surgeries.[12] Since that time, CMS has refined the logic used to classify spinal surgery discharges in addition to adopting the MS-DRGs. As seen in Table 4.4, the estimated payment-to-cost ratios for the four base DRGs that are affected by the pass-through are 1.166 or higher under the MS-DRGs *before* consideration of the pass-through amounts. (The information for these DRGs is italicized in Table 4.4). According to a recent study for CMS, device costs represent on average 51% of the estimated costs for spinal surgery MS-DRGs in the Major Diagnostic Category (MDC) for Diseases and Disorders of the Musculoskeletal System (MDC 8).[13]

In addition to the general question of the appropriateness of the pass-through, there are two problems with the base DRG for Spinal Procedure for Diseases and Disorders of the Nervous System (MDC 1) that warrant further consideration:

- The base DRG for MDC 1 spinal procedures includes not only spinal fusions that are defined as complex spinal surgery when performed on discharges in MDC 8 but also other spinal procedures that do not qualify as complex spinal procedure when performed on discharges assigned to MDC 8. In MDC 8, these spinal procedures are assigned to the base DRG for Back and Neck Procedures, which does not qualify for the hardware pass-through.
- The MS-DRG logic divides the MDC 1 base DRG for Spinal Procedures into three DRGs: Spinal Procedures with no CC/MCC, Spinal Procedures w CC or Spinal Neurostimulators, and Spinal Procedures with MCC. In other words, the MS-DRGs recognize the higher cost of providing a neurostimulator by assigning a discharge with no CC but a neurostimulator to the higher-

[12]Wynn, Barbara O. and Giacomo Bergamo *Payments for Hardware Used in Complex Spinal Procedures under California's Official Medical Fee Schedule for Injured Workers*. Santa Monica, CA: RAND WR-301-ICJ, 2005.

[13] Dalton, Kathleen, Sara Freeman, and Arnold Bragg. Refining Cost to Charge Ratios for Calculating APC and MS-DRG Relative Payment Weights. Research Triangle Park, NC: RTI International, July 2008. Available at http://www.rti.org/reports/cms/HHSM-500-2005-0029I/PDF/Refining_Cost_to_Charge_Ratios_200807_Final.pdf. Accessed 10/31/08.

paying MS-DRG for discharges with a CC. Despite the higher MS-DRG allowance, the OMFS then allows the cost of the neurostimulator to be passed through.

SB 228 eliminated the pass-through for hardware used in the MDC-8 base DRG for Back and Neck Procedures except Spinal Fusion. This base DRG contains spinal procedures that implant neurostimulators or artificial spinal discs. Similar to the base MS-DRG for Spinal Procedures in MDC 1, the MS-DRG logic assigns patients with no CC but either a neurostimulator or spinal disc to the MS- DRG for discharges with CC or MCC. Despite this assignment of no CC discharges to a higher MS-DRG, the estimated payment-to-cost ratio for discharges assigned to the base MS-DRG for Back and Neck Procedures except Spinal Fusion is 0.95.

CONSIDERATIONS FOR THE WC PROGRAM

Considerable changes have taken place in both WC inpatient utilization and allowances under the OMFS that warrant on-going monitoring.

- Our analysis suggests that there are wide variations in the payment-to-cost ratios for inpatient stays. Relatively low or high payment-to-cost ratios create financial incentives that may adversely impact on the provision of medically appropriate care. Low payment-to-cost ratios may limit access to medically necessary care and high payment-to-cost ratios create an incentive for unnecessary care. Prior to January 1, 2004, adjustment factors modified the relative weight for certain high volume DRGs to be more reflective of the costs of workers compensation patients. The AD has authority to adjust the DRG-specific relative weights within an overall 120 percent cap on aggregate allowances but chose not to do so when implementing the SB 228 provisions. A re-examination of this issue would be appropriate after the MS-DRGs are fully implemented in 2009 and hospitals have responded to incentives to improve their coding practices.

- The pass-through for spinal hardware remains problematic. The analysis suggests that the payment at 1.2 times the Medicare payment rate is adequate-or more than adequate- to cover the cost of inpatient stays for complex spinal fusion. On average, about 50 percent of the payment (before the 1.2 muliplier) represents the device costs. Passing through this amount on top of 120 percent of the Medicare payment results in excessive allowances for inpatient spinal surgeries and creates incentives for unnecessary surgery. There are different options for addressing this issue, including either eliminating the pass-through or reducing the OMFS multiplier to exclude the amounts implicit for hardware in Medicare's payment rates.[14] If the pass-through is continued, the inconsistencies in the pass-though policies for spinal procedures in MDC 1 and MDC 8 should be reviewed. Further, the setting for surgical procedures should be monitored.
- Medicare's implementation of the MS-DRGs should improve payment accuracy but coding improvement may lead to payment increases that are not attributable to real increases in the resources required to treat WC patients. While the Labor Code does not provide for policy adjustments to the inflation factor such as the one Medicare will be making for coding improvement, the AD has authority to adjust the OMFS allowances within the overall 120 percent cap. If warranted, this authority could be used to adopt a lower percentage add-on to account for the effect of coding improvements.

[14] A discussion of the options is found in Wynn, Barbara O. and Giacomo Bergamo Payments for Hardware Used in Complex Spinal Procedures under California's Official Medical Fee Schedule for Injured Workers. Santa Monica, CA: RAND WR-301-ICJ, 2005.

5. EXEMPT HOSPITAL SERVICES

The S.B. 228 requirement that the OMFS for inpatient hospital services be based on the fee-related structure and rules of Medicare program was effective January 1, 2005 for specialty hospitals that are excluded from the Medicare acute care hospital payment system. Specialty hospitals include rehabilitation hospitals and rehabilitation units of acute care hospitals, psychiatric hospitals and psychiatric units of acute care hospitals, and childrens', cancer, and long-term care hospitals. Medicare uses different payment methodologies to pay for inpatient services in specialty hospitals. In addition, small rural hospitals providing limited inpatient care that have applied for special status as critical access hospitals (CAHs) are exempt from the Medicare fee schedule for acute care hospital services.

The DWC regulations implementing the S.B. 228 OMFS provisions for acute care hospitals effective January 1, 2004 exempted both inpatient and outpatient services furnished by specialty hospitals and CAHs. There has been no subsequent regulatory action on the OMFS for these facilities. Currently, payment for these OMFS-exempted services is based on rates the payer has negotiated with the hospital or, in the absence of negotiated rates, the amount the payer and hospital are able to agree on for the individual case. In either case, the hospital's charges are likely to be a factor in determining payment. In hospitals that have a contract with the payer, unusually high charges typically trigger the contract's stop-loss threshold. When a contract is not in place, the hospital's billed charges are the starting point for determining the payment amount. Thus, California's WC program is vulnerable to high hospital markups as long as these services remain exempt and to additional administrative costs for negotiating a payment amount when a contract is not in place.

Table 5.1 shows the number of workers' compensation inpatient stays in the exempt hospitals in 2005 and summarizes Medicare's fee schedule methodology.[15] The information provides a sense of the magnitude of

[15] For consistency, records that do not include charges for the inpatient stay are not included.

program vulnerabilities in continuing to exempt these facilities from the OMFS. In total, there were 1,418 WC inpatient stays in specialty hospitals in 2005. Hospital charges for these stays totaled $67 million. The amounts that were paid for these stays cannot be determined from the OSHPD data. WC patients were concentrated in rehabilitation and psychiatric facilities. While there were only 24 WC stays in long-term care hospitals, the charges for these stays totaled nearly $7 million. Medicare has special payment rates for stays in these three types of facilities that are discussed in greater detail in the subsections that follow.

Medicare pays three other types of hospitals - childrens', cancer, and critical access- using cost-based payment methodologies rather than pre-determined rates. These hospitals had relatively few WC stays. As discussed below, the closest approximation to a Medicare-based OMFS amount for these facilities would be to establish a methodology for estimating the cost of the stay.

The substance abuse facility is not a Medicare participating provider and is not examined further in this section.

Table 5.1
Overview of WC Stays in Specialty Hospitals in 2005 and Medicare Payment Methods

Type of Hospital	No. of Hospitals	Number of Discharges	Total Charges	Medicare Payment Method
Rehabilitation (including units)	78	975	$ 48,884,7246	Per discharge rate based on impairment and functional status
Psychiatric (including units)	59	329	$ 8,852,157	Per diem DRG-based rate
Long-Term Care Hospital	4	24	$ 6,855,410	Long-term care DRG-based rate
Critical Access Hospital (CAH)	10	70	$1,610,884	Cost
Cancer	2	***	***	Cost subject to a rate of increase limit
Children's	3	***	***	Cost subject to a rate of increase limit
Substance Abuse	1	***	***	NA

Type of Hospital	No. of Hospitals	Number of Discharges	Total Charges	Medicare Payment Method
All exempt hospitals and units		1,418	$67,470,929	

*** Fewer than 10 WC discharges

INPATIENT REHABILITATION SERVICES

Overview of Medicare Payment System

Medicare exempts from the acute care payment system inpatient rehabilitation facilities (IRFs) - freestanding hospitals and distinct part rehabilitation units of acute care hospitals. For IRF designation, 75% of the facility's inpatient population must have one of 13 conditions that typically require intensive rehabilitation in an IRF. Medicare's payment for stays in rehabilitation facilities is determined on a per discharge basis based on the patient's clinical characteristics and expected resource needs. Each patient is assigned to a case mix grouping (CMG) that takes into account the patient's rehabilitation impairment category, functional status (both motor and cognitive), age and co-morbidities (which are grouped into tiers for payment purposes). Payment for services furnished to a Medicare patient is determined by a standard per discharge amount adjusted for facility characteristics and the relative weight for the CMG to which the patient is assigned. The relative weight accounts for differences in cost across the CMGs and co-morbidity tiers.

Rehabilitation Services Provided to Injured Workers

Table 5.2 summarizes information from the OSHPD data for patients whose expected primary payer was reported as workers' compensation in 2003-2005. The number of patients remained about the same over the three-year period while the mean length of stay declined from 16.9 days in 2003 to 14.8 days in 2005. In 2005, there were 975 discharges where type of care was reported as rehabilitation, of which about ¾ were discharged from rehabilitation units of acute care hospitals and ¼ were discharged from free-standing rehabilitation hospitals.

Table 5.2
WC Discharges from IRFs, 2003-2005

Discharges from Rehabilitation Facilities	2003	2004	2005
Total Discharges	1,035	1,016	975
Freestanding hospitals	241	257	250
Units	794	749	725
Source of Admission			
Direct admission	125	115	115
Same acute hospital	464	426	425
Different acute hospital	421	453	421
Non-acute transfer	25	22	13
Average Charge per Stay	$49,655	$45,309	$50,180
Mean Length of Stay	16.9 days	14.9 days	14.8 days

About 13 percent of workers' compensation patients were reported as being directly admitted to the rehabilitation hospital, i.e., the rehabilitation stay was not preceded by an acute care episode. The reported charges for rehabilitation stays were on average $50,180. After applying facility-specific cost-to-charge ratios to the charges for each stay, the average cost per stay was $19,240, or 38% of charges.

Considerations for the Workers Compensation Program

Without the functional status data needed to classify the workers' compensation patients into the appropriate CMGs, the appropriateness of adapting the Medicare IRF PPS for rehabilitation facility patients cannot be assessed. The payment rate is determined on a per case basis, and how the costs to treat Medicare patients, who are predominately over age 65, compare to those for workers' compensation patients, who are typically younger and have fewer co-morbidities, cannot be determined from the available information. The case mix is quite different (Medicare has predominately stroke and hip replacement cases) but what is important is how costs compare for a particular CMG/co-morbidity tier. For acute care services, studies have shown that workers' compensation patients tend to be relatively less costly than Medicare patients. However, it is not known whether this relationship would hold for rehabilitation services.

Implementation of the Medicare fee schedule with up to a 120 percent multiplier would conform most closely to what was anticipated in S.B. 228 but some analysis of the appropriateness of using the Medicare rates would be advisable before implementing a Medicare-based fee schedule. Adopting the Medicare-based fee schedule would require rehabilitation facilities to complete a patient assessment for each WC patient within three days of admission. Some may already be completing the assessment for all patients, and the assessment could provide useful information in determining the patient's plan of care as well as payment classification. The other information needed to compute the rate for each rehabilitation facility is available on the CMS website.

Because Medicare and WC patients are likely to have different lengths of stay, Medicare-based per case payment rates may not reflect the costs required to provide rehabilitative care to injured workers. An alternative would be to determine a Medicare-based per diem payment rate for WC patients by dividing Medicare per case rate by the mean length of stay for the CMG/comorbidity tier. This approach would automatically adjust the OMFS amount for each patient's actual length of stay. Although it would create an incentive to increase length of stay, this incentive is already present in the current system. It would require DWC to calculate the OMFS per diem rates and IRFs to complete the patient assessment form.

A less administratively burdensome alternative would be to apply a cost-to-charge ratio to billed charges. Other state workers' compensation programs and the federal workers' compensation program use this payment methodology to pay for services furnished by hospitals that are exempted from Medicare's acute care prospective payment system. It assures that the payments for each stay will be sufficient to cover the estimated cost of the services. This approach could use the cost-to-charge ratio reported on the CMS website as part of the annual update in the payment rates for rehabilitation hospitals multiplied by a factor to allow the hospital to earn a positive margin on workers' compensation patients (e.g., the facility's cost-to-charge ratio x 1.2). Although not in strict accordance with the "fee-related structure" of the Medicare payment system, it has elements of the Medicare payment system and assures that there will be not access issues or excessive payments. This

option is most appropriate if there is skepticism about completion of the assessment instrument and/or the appropriateness of the Medicare-based payments for WC rehabilitation services. It entails less administrative burden because only the hospital's cost-to-charge ratio and the total charges for the stay are needed to determine payment. The major drawbacks to this charge-based payment approach are that it retains the incentives in the current OMFS exemption to deliver unnecessary care and to escalate charges.

INPATIENT PSYCHIATRIC SERVICES

Overview of Medicare Payment System

Medicare separately certifies psychiatric hospitals and distinct part units of acute care hospitals. The eligibility rules require that a psychiatric unit admit only those patients who have a principal diagnosis that is listed in the Diagnostic and Statistical Manual of Mental Disorders (DSM) or classified in Chapter Five ("Mental Disorders") of the IDC-9-CM. Medicare pays for inpatient services furnished by these facilities using a per diem rate adjusted for case-level and facility-level adjustments. Patients are assigned to the same MS-DRGs that are used under the acute care PPS system (taking into account the patient's principal and secondary diagnoses and surgical procedures). Payment is made for all MS-DRGs that contain a psychiatric ICD-9-CM code. A set of case-level adjustments applies to the standard per diem rate to account for the relative difference in expected costs. Each of 17 psychiatric MS-DRGs[16] has its own adjustment factor that is applied to the standard per diem rate. Other case-level adjustments apply for certain co-morbidities, the patient's length of stay, and the patient's age. A variable per diem adjustment factor applies to each day of the stay. The first 8 days in the stay receive a higher per diem payment (e.g., the adjustment factor for Day 4 is 1.04) and Days 11 or longer receive a lower per diem payment (e.g., the adjustment factor for

[16] DRGs for Major Diagnostic Category 19: Mental Diseases and Disorders and MDC 20: Alcohol/Drug Use and Alcohol Induced Organic Mental Disorders. The number of DRGs has increased from 15 CMS-DRGs to 17 MS-DRGs.

Day 20 is 0.95) and a higher adjustment factor applies if the psychiatric stay was not preceded by an acute care inpatient stay.

Psychiatric Inpatient Facility Services Provided to Injured Workers

Between 2003 and 2005, the number of inpatient psychiatric admissions declined about 40 percent while the average length of stay remained about the same (Table 5.3). We are unable to determine the extent to which the decline might reflect the impact of the ACOEM guidelines versus other factors, such as the general shift from inpatient psychiatric care to outpatient psychiatric care. For most inpatient stays, WC patients were admitted directly to the psychiatric hospital or unit, although there was an increase in the proportion of WC patients admitted after an acute care stay. In 2003, about five percent of patients were transferred from an acute care hospital compared to almost 20 percent in 2005. Most inpatient stays are concentrated in a few DRGs with the most common admissions being for psychoses (Table 5.4).

Table 5.3
Overview of WC Patients Receiving Inpatient Psychiatric Care: 2003-2005

	2003	2004	2005
Total Discharges	544	553	329
Freestanding hospitals	180	201	77
Units	64	52	52
Source of Admission			
Direct admission	514	524	289
Same acute hospital	12	19	29
Different acute hospital	8	8	8
Non-acute transfer	4	2	3
Average Charge per Stay	$23,637	$23,757	$26,988
Mean Length of Stay	12.0 days	12.5 days	14.9 days

Table 5.4
DRG Assignments for WC Psychiatric Inpatients: 2003-2005

DRG Description	2003	2004	2005
Psychoses	411	396	246
Depressive Neuroses	34	31	18
Neuroses Except Depressive	23	23	10
Alcohol/Drug Abuse or Dependence w/o Rehabilitation Therapy	33	40	23
Various Other DRGs	43	63	23

Considerations for the Workers' Compensation Program

A major determinant of cost per discharge is length of stay, which is automatically adjusted for in Medicare's per diem payment system for inpatient psychiatric facilities. Further, there are a number of case-level adjustments. As a result, the payment system does not raise the same appropriateness issues as the payment system for rehabilitation facilities and is more likely be suitable for workers' compensation patients.

Implementation of the Medicare-based fee schedule with up to a 120 percent multiplier would conform most closely to what was anticipated in S.B. 228 but would require DWC to maintain and update the fee schedule on a regular basis. The necessary information to compute the rate for each psychiatric facility is available on the CMS website. If the administrative burden of maintaining the fee schedule outweighs the advantages of adopting a fee schedule for a relatively small number of WC patients, an alternative would be to use the cost-to-charge ratio approach. As would be the case with rehabilitation facilities, the cost-to-charge ratio approach would reduce the administrative burden relative to continuing the exemption (where payment rates must be negotiated) or implementing a Medicare-based fee schedule but would retain incentives for unnecessary services and escalating charges.

LONG-TERM CARE HOSPITALS

Overview of Medicare Payment System

Medicare separately certifies long-term care hospitals that have an average Medicare inpatient length of stay of greater than 25 days. For each long-term care DRG, payment is made at a predetermined, per-discharge amount utilizing the same MS-DRGs as the acute care hospital inpatient payment system but with relative weights that reflect the costs of caring for the medically complex patients treated at long-term care hospitals. Case-level adjustments are made for unusually high-cost cases, short-stay cases, interrupted stays for acute care hospitalization, and cases discharged and readmitted to co-located providers.

LONG-TERM CARE HOSPITAL SERVICES PROVIDED TO INJURED WORKERS

Table 5.5
Workers Compensation Discharges from Long Term Hospitals in 2003-2005

	2003	2004	2005
Total Hospitals	7	5	4
Total Discharges	10	22	24
Estimated Charges Per Stay	$161,770	$59,531	$285,642
Mean Length of Stay	55.8 days	30.8 days	79.1 days

CONSIDERATIONS FOR THE WORKERS' COMPENSATION PROGRAM

Very few injured workers receive inpatient care in long-term care hospitals, but the costs of their care are substantial and vary significantly across patients. The Medicare payment system for long-term care hospitals is predicated on average costs. While some patients may be more expensive than the average patient, others are less expensive and on average the payment reflects the estimated costs of providing care. There are too few WC cases at each long-term care hospital for the averaging concept to work; as a result, there is strong likelihood that a long-term care hospital would have significant profits or losses on the services it provides to WC patients and that the impact may be different from year to year. Given the risk that the cost of

caring for a patient may be substantially different from the maximum allowable fee under a Medicare-based fee schedule and the administrative burden of maintaining the fee schedule, consideration should be given to alternative approaches. These include:

- Use a cost-to-charge ratio with a multiplier. This would assure payments are consistently related to the estimated costs of providing care and entail the least administrative burden. Drawbacks are that it retains incentives under the OMFS exemption to deliver unnecessary care and escalate charges.
- Pay based on a per diem payment rate. While not in strict accordance with the "fee-related structure" of the Medicare payment system, the option has elements of the Medicare payment system that are most adaptable for the workers' compensation patient population. It provides incentives for prolonging the stay but also assures that payments are related to reasonable costs of caring for the patient.
- Continue to exempt long-term care hospitals. The rationale would be that the volume does not justify the administrative burden of maintaining the OMFS for these services. The disadvantage is that these are often very high cost cases where the lack of a structure for determining maximum allowable fees could leave employers/payers vulnerable to excessive payments and could involve considerable burden in negotiating a reasonable payment.

OTHER EXEMPTED HOSPITALS

OVERVIEW OF MEDICARE PAYMENT SYSTEM

In the 2005 OSHPD data, inpatient care was provided to WC patients by two California cancer hospitals,[17] three childrens' hospitals, and ten critical access hospitals that are exempt from the Medicare payment system for acute care hospitals. Cancer and childrens' hospitals are exempt because of concerns that they may have different cost structures than general acute care hospitals. The exemption for critical access hospitals grew out of concerns over the financial viability of these small rural hospitals and potential access problems for rural patients. These exempted facilities are paid based on the reasonable costs attributable to providing services to Medicare patients. The costs are determined retroactively based on annual Medicare cost report data filed by the hospitals. Childrens' and cancer hospitals are also subject to an aggregate limit on the rate of increase in Medicare costs per discharge.

CONSIDERATIONS FOR THE WORKERS' COMPENSATION PROGRAM

Complete adoption of the Medicare payment methodology for the hospitals paid using a cost-based approach is not feasible because the actual payment for a particular case is not known when the patient's bill is processed. Medicare makes interim payments on individual bills and a retroactive final payment determination after the close of the cost reporting year based on the information filed on an annual Medicare cost report. A reasonable approximation of the Medicare methodology would be to estimate costs by applying a cost-to-charge ratio to the charges on the inpatient bill without a final year-end reconciliation.[18]

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[17] Two California cancer hospitals are exempt from the Medicare PPS: City of Hope in Los Angeles and the USC Kevin Norris Cancer Hospital.

[18] Unlike other exempt hospitals, the cost-to-charge ratios for these hospitals are not readily available on the CMS website so that other sources for a cost-to-charge ratio, such as the OSHPD financial statements, would need to be considered. Application of Medicare's aggregate limit on the rate of increase in costs per discharge is neither feasible nor appropriate. It is not possible to apply an aggregate limit at the time payment determinations are made on

The alternative would be to continue to exempt these facilities from the OMFS on the grounds that the Medicare payment system is not feasible for the workers' compensation program to implement and there are only a few discharges.

individual claims. Further, the limit is based on Medicare costs per discharge in a base period updated for inflation and may not reflect the resource needs of injured workers.

6. SUMMARY OF KEY FINDINGS AND CONCLUSIONS

Key findings from our analysis of WC inpatient hospital stays over the 2-year period from 2003-2005 include the following:

- There was a 9.6% decrease in the number of WC inpatient hospital stays. While the number of stays declined, the mix of inpatient stays remained relatively stable.
- The estimated payment per discharge increased 5.0 percent. However, the increase would have been higher if the OMFS had not been updated. Although the 2004 OMFS revisions increased the allowances for acute care inpatient hospital stays, these higher allowances were more than offset by the elimination of the OMFS exemptions for certain types of stays in acute care hospitals and updating of the composite rates and cost-to-charge ratios.
- The combination of the decrease in discharges and increase in average payment resulted in an estimated 5.1 reduction in aggregate payments. This estimate assumes payment levels consistent with the OMFS for acute care hospital stays and at 90 percent of charges for OMFS-exempt stays.
- The estimated payment-to-cost ratio for acute care inpatient stays was 1.09 in 2005 and is likely to increase with the implementation of severity-adjusted DRGs.
- The OMFS has not been expanded to include specialty hospitals. In 2005, charges for WC stays in these hospitals totaled $67 million. Stays in rehabilitation hospitals and units of acute care hospitals accounted for nearly $49 million of this amount.

Our study raises several concerns that warrant monitoring and consideration of changes in OMFS policies.

- There is wide variation in the payment-to-cost ratios across the MS-DRGs that could adversely affect the provision of appropriate inpatient care. This issue should be re-examined after the MS-DRGs are fully implemented. The AD has authority to adjust the payment rates within the 120 percent cap.

- The pass-through for costs of the cost of hardware used during complex spinal surgery is problematic. The average payment-to-cost ratios for the DRGs affected by this provision are higher than average *before* the pass-through payments are taken into consideration. There are inconsistencies in the Labor Code regarding which surgical procedures are "complex" and eligible for the pass-through. Further, the pass-through creates an incentive to shift less complex spinal surgeries from outpatient to inpatient settings. AD has the authority to eliminate the pass-through for some or all spinal surgeries.
- While the MS-DRGs should improve payment accuracy, they may also lead to unwarranted payment increases caused by coding improvement rather than a real change in patient mix. The Medicare program will adjust for coding improvement through the update factor. The Labor Code precludes incorporating this adjustment in the update factor but does give the AD authority to adopt a multiplier that is less than 1.20 times the Medicare rates.
- Because hospital charges are substantially higher than costs, payers are at risk for unnecessary expenditures as long as specialty hospitals- particularly rehabilitation facilities - remain exempt from the OMFS. The AD has authority to adopt Medicare-based fee schedules for specialty hospitals; however, modifications of the Medicare methodologies for the WC patient population may be needed, particularly with respect to WC stays in rehabilitation and long-term care facilities. The types of changes that may be needed would determine whether the AD could implement them within existing authorities or whether changes in the Labor Code would be needed. For small-volume specialty hospitals, it may not be worth the administrative burden of determining amounts that would be payable by Medicare.

This working paper is part of an on-going study evaluation the impact of the changes in Labor Code provisions affecting medical care

provided injured workers. In the final report, we will update our analysis to include inpatient claims through 2007.

APPENDIX

Table A summarizes the distribution of inpatient stays across the three years. The table combines related DRGs that are differentiated solely based on the presence or absence of CCs or, in the case of some surgical DRGs, specific diagnoses.

Table A
WC Stays Accounting for At Least One Percent of Total Volume, 2003-2005

	2003		2004		2005	
Description	**Number**	**% of Total**	**Number**	**% of Total**	**Number**	**% of Total**
Spinal Fusion Except Cervical	3,315	10.9%	2,697	9.2%	2,517	9.1%
Back & Neck Procedures Except Spinal Fusion	3,289	10.8%	3,128	10.7%	3,027	11.0%
Major Joint & Limb Reattachment Procedures of the Lower Extremity	2,087	6.9%	2,294	7.8%	2,402	8.7%
Cervical Spinal Fusion	1,770	5.8%	2,060	7.0%	1,871	6.8%
Medical Back Problems	1,185	3.9%	1,068	3.7%	929	3.4%
Lower Extremity & Humerus Procedures except Hip, Foot, Femur	1,168	3.8%	1,202	4.1%	1,218	4.4%
Rehabilitation	1,057	3.5%	993	3.4%	929	3.4%
Combined Anterior/Posterior Spinal Fusion	1,048	3.4%	967	3.3%	677	2.5%
Major Shoulder/Elbow Procedures, or Other Upper Extremity Procedures	978	3.2%	763	2.6%	663	2.4%
Local Excision & Removal of Internal Fixed Device except Hip & Femur	762	2.5%	778	2.7%	705	2.6%
Knee Procedures	505	1.7%	431	1.5%	414	1.5%
Cellulitis	501	1.6%	472	1.6%	499	1.8%
Psychoses	429	1.4%	412	1.4%	254	0.9%
Soft Tissue Procedures	352	1.2%	352	1.2%	325	1.2%
Wound Debridement & Skin Graft except Hand, for Musculoskeletal & Connective Tissue Disorders	341	1.1%	310	1.1%	290	1.1%
Spinal Procedures	327	1.1%	267	0.9%	234	0.9%
Hip & Femur Procedures Except Major Joint	315	1.0%	358	1.2%	331	1.2%

Description	2003		2004		2005	
	Number	% of Total	Number	% of Total	Number	% of Total
Major Thumb or Joint Procedures or Other Hand or Wrist Procedures	387	1.0%	379	1.3%	334	1.2%
O.R. Procedure For Infectious & Parasitic Diseases	291	1.0%	300	1.0%	267	1.0%
Hand Procedures for Injuries	270	0.9%	275	0.9%	293	1.1%
Other Inpatient Stays	10,090	33.4%	9,725	33.3%	9,345	34.0%
Total Inpatient Stays	30,467	100%	29,231	100%	27,524	100%