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Medical Care Provided Under California's Workers' Compensation Program

Appendixes

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



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Appendix

APPENDIX A

WORKERS' COMPENSATION INFORMATION SYSTEM METHODS

This appendix provides information on the methodology that we used to analyze the WCIS medical data for 2007. Results from the analyses are discussed in Chapters Three and Five of the monograph.

DATABASE

Several of our analyses describing medical payments made through the California WC system draw on a 100-percent file of medical bills in the WCIS that were paid in calendar year 2007. All plans are required to transmit medical-billing data to the WCIS (California Department of Industrial Relations, 2005). The WCIS contains billing data from both insured and self-insured plans. Because reporting is not strictly enforced, WCIS data are incomplete. Nevertheless, these data are likely to provide a sufficiently representative sample of the medical care provided through the WC system for the purposes for which we use the data in this monograph. Recognizing the incompleteness of the data, we do not summarize absolute payment amounts but rather the distribution of payments across types of service and the location in which care was rendered. However, a systematic examination of representativeness is advisable before the data are used to measure changes over time or develop performance metrics. Our WCIS data file included all bills that had been submitted to the WCIS as of March 2009 that were paid in 2007, including bills that were resubmitted for payment for any reason (e.g., inadequate documentation, billing errors). Although these duplicate records might pose challenges for describing patterns of utilization within the WC system, our analyses focused on payments rather than utilization.

The WCIS uses the electronic data interchange (EDI) reporting standards established by the IAIABC Release 1 (IAIABC, 2002). The required data elements differ for Type A bills (typically derived from institutional provider billings using a UB-92 form) and Type B bills

(typically derived from noninstitutional provider billings using an HCFA 1500 form). The IAIABC implementation guide assigns each data element a data number (DN).

PAYMENTS BY TYPE OF SERVICE

Our analyses summarizing 2007 medical payments according to type of service were performed as follows. First, we used the OMFS to map Healthcare Common Procedure Coding System (HCPCS) line-level codes (using billed codes [DN-714] or, when different, paid codes [DN-726]), as well as locally defined procedure codes (both billed codes [DN-715] and paid codes [DN-729]) into meaningful categories. We used the major categories of the OMFS and disaggregated categories that were especially meaningful for patients receiving care through the WC system. For all other nonphysician services (e.g., pharmacy, DME), we aggregated HCPCS and local codes into mutually exclusive, high-level categories. We also included physician services that were submitted as part of institutional bills as a separate type of service.

PAYMENTS BY PLACE OF SERVICE

We summarized the distribution of services by place of service using facility codes for Type A bills (DN-504) and place of service codes for Type B bills (DN-555 for bill-level codes or DN-600 for line-level codes when they differed from bill-level codes).

BILL ADJUSTMENTS

In the process of making adjustments to bills, insurers might select any one of several hundred codes to indicate their reason for adjustment (DN-544). A listing of the bill-adjustment reason codes is found in Appendix B of the IAIABC Implementation Guide (IAIABC, 2002). We were unable to identify existing taxonomies to summarize the nature of payment adjustments that were sufficiently detailed and responsive to our research questions and therefore developed our own taxonomy. We categorized individual payment-adjustment reasons into nine mutually exclusive groups to describe the total amount of these adjustments across different types of plans (insured versus self-insured) and according to whether or not care was provided through a contract. We

analyzed bill adjustments using the 2007 WCIS data set that included both paid and unpaid claims, which we analyzed separately. To create Table 5.1 in Chapter Five, we identified all line items for which no payment was made, then summarized the amount of adjustments for each reason as a percentage of the total amount of billed charges for line items with zero payment. To create Table 5.2 in Chapter Five, we first eliminated duplicate bills (adjustment-reason code 18, 23, 97, 169, 190, B13, or B20). Second, we identified all bills for a common service that were resubmitted for payment at least once because of adjustments made by payers. We identified these bills by matching records on four variables: jurisdiction claim number (JCN), provider, service date, and procedure code, which define a tetrad for the purposes of this analysis. For each tetrad, we deleted all records except the record with the most recent paid date because adjustment amounts appearing on this bill are cumulative. This approach allowed us to analyze the total value of adjustments to the "final" version of each bill.

MEDICAL-NECESSITY ANALYSIS

For our assessment of the outcomes of medical-necessity review (Tables 5.5 and 5.6 in Chapter Five), we used the full WCIS data set comprised of both paid and unpaid claims. We identified related bills for the same service by matching records on four variables: JCN, provider, service date, and procedure code. These variables comprise a tetrad and allow us to identify all adjustments made to bills submitted repeatedly for a single service. Any record that had missing values for JCN, provider, service date, or procedure code was deleted. We then eliminated any tetrads in which the earliest paid date for a bill within the tetrad was dated July 1, 2007, or later. This allowed us to analyze the outcomes of bill resubmissions over a period of *at least* six months. We then identified all tetrads associated with an adjustment-reason code relating to medical necessity (DN-544 code 40, 50, 54-58, 61, 107, 108, 133, 150-152, 165, B5, B14, B15, or B22). Next, looking at all bills within a tetrad, we identified whether or not any payment was made for services initially flagged as being potentially not medically necessary. We report the value of services flagged for medical-necessity review (in

billed charges) in Table 5.5 in Chapter Five and the value of services that were *not* paid by December 31, 2007 (also in billed charges), in Table 5.6 in Chapter Five. Results were reported by type of service categories that were largely based on Berenson-Eggers Type of Service (BETOS) codes. We aggregated some BETOS codes and disaggregated others to develop categories of services that were considered meaningful for this analysis.

APPENDIX B

PAYMENTS FOR INPATIENT HOSPITAL SERVICES

The work described in this appendix examined changes in the volume and mix of inpatient hospital services over 2003–2008 and the impact that the OMFS revisions had on payments for inpatient hospital services. The purpose of the appendix is to describe the data and methodology used in the analysis and to provide more-detailed findings than those presented in Chapter Three of the monograph.

STUDY QUESTIONS

The major questions explored with respect to acute-care hospital services were the following:

- What changes occurred in the allowances for acute inpatient hospital services? The changes from 2003 to 2008 resulting from changes in volume, the mix of services, and the OMFS revisions were separately determined, and the results for this analysis are reported in Chapter Two of the monograph.
- What has been the effect that the OMFS changes have had on allowances for inpatient hospital services? By modeling the allowances before and after the implementation of the OMFS revisions, the impact 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 lead to behavioral changes affecting 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 to provide medically unnecessary inpatient care.

DATA AND METHODS

The analyses in this appendix use administrative data obtained from OSHPD on inpatient discharges occurring in calendar years 2003-2008. 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. The standard per-discharge rate before adjustment for case mix (the "composite rate") for each hospital and other information available from the DWC website was used to estimate maximum allowable fees under the OMFS (including outpatient payments) 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 WC patients, the number of discharges with WC reported as the expected payer was compared by DRG across the analysis years. Changes in the average case-mix index (CMI, or average DRG relative weight applicable to WC discharges) 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 observed changes in the distribution of patients are 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, is 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 prospective payment system (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 might 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 might have negotiated more than a 10-percent discount on charges for services that were exempt from the OMFS.
- It does not account for the additional payments for hardware used during spinal and back surgeries in 2003 and during complex spinal surgeries in 2003-2008.
- 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 allowance-to-cost ratios for 2008 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 published in the FY 2010 final rule. A limitation is that this approach assumes that charges are consistently related to costs. An overall cost-to-charge ratio reflects the hospital's average markup across all services, but there can be substantial differences in hospital markups for particular types of services. The differences can vary across departments and within departments. For example, hospitals tend to establish a higher markup for lower-cost medical supplies than for devices, which would tend to

understate the cost of complex spinal surgery cases and overstate the allowance-to-cost ratio. We make MS-DRG-specific adjustments for cost compression for all MS-DRGs for which devices are commonly used. Nevertheless, we are limited to using an overall cost-to-charge ratio for this analysis and do not have the detailed charge information needed to determine a particular hospital's markup for various items and services. The limitations noted above for estimating payments apply to this analysis.

The aggregate allowance-to-cost ratios do not take into account the pass-through payments for hardware used during complex spinal surgery. This is because the data available to the study do not provide information on the billed charges for devices used during WC spinal surgeries pass-through or the amounts paid. A CMS-funded report by RTI International (Dalton, Freeman and Bragg, 2008) found the following:

- Device costs (including any associated overhead costs) are approximately 51 percent of total cost per Medicare discharge for spinal surgery.
- Charge compression understates cost-based relative weights for spinal surgeries by approximately 12 percent.

Because device costs are passed through for WC discharges, the total OMFS allowance is understated by at least 51 percent. The actual device costs for WC patients are likely to be higher for several reasons. First, the estimate reflects implanted-device costs only; the OMFS allows additional items to be passed through. Second, the pass-through does not contain the same incentives as a per-discharge payment to consider less costly alternatives in making decisions on device usage and related materials. Without these incentives, WC patients are likely to have higher usage rates for more-costly materials. With respect to charge compression, as noted above, we increased the cost estimated by applying the overall cost-to-charge ratio by the estimated effect of charge compression.

OVERALL FINDINGS

Table B.1 shows the total number of WC inpatient stays and the estimated payments for inpatient services from 2003 to 2008. The total number of discharges fell 22.4 percent during the period, from 30,467 in 2003 to 23,657 in 2008. Because the number of injuries involving days lost from work declined nearly 29 percent over the same period, the reduction in WC stays is not unexpected.¹ Arguably, given the fewer injuries with time lost from work and the implementation of the ACOEM guidelines, one might have expected a somewhat greater decline, although not as great as the actual decline in injuries because the discharges reflect the prior, as well as the current, accident year. Reflecting the lower volume of WC inpatient stays, estimated total payments for inpatient hospital services were at 2003 levels in 2007 despite inflation in hospital allowances under the OMFS, but then increased by 3 percent between 2007 and 2008. There was a 32.8-percent increase in the estimated payment per discharge over the period, or an increase of more than \$5,200 per discharge.

Table B.1
Number of Discharges and Estimated Payments for Workers' Compensation
Hospital Inpatient Discharges, 2003-2008

	2003	2004	2005	2006	2007	2008	5-Year Change (%)
Discharges	30,467	29,231	27,542	25,995	25,253	23,657	-22.4
Estimated payments (\$ thousands)	487,005	466,904	462,331	464,076	487,041	502,333	3.1
Estimated payment per discharge (\$)	15,985	15,973	16,786	17,852	19,300	21,234	32.8

Table B.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

¹ According to the California Department of Industrial Relations (undated [c], Table 2), the total number of nonfatal occupational injuries and illnesses involving days lost from work were 223,500 (2003); 201,400 (2004); 179,400 (2005); 171,000 (2006); 168,200 (2007); and 158,900 (2008).

with 84 percent or more after the fee-schedule changes were implemented. The reduction in the OMFS-exempt payments is primarily attributable to the elimination of exemptions for particular types of cases (e.g., tracheostomies and burns) and an updating of the composite-rate listing for new hospitals. The exemptions for selected 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 is discussed 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 B.2
Distribution of Estimated Payments, by Official Medical Fee Schedule Status, 2003-2008

Year	OMFS Allowances		OMFS Exempt		Total Estimated Payments (\$ thousands)
	(\$ thousands)	Percentage of Total	(\$ thousands) ^a	Percentage of Total	
2003	331,144	68.0	155,861	32.0	487,005
2004	394,268	84.8	72,637	15.2	466,904
2005	389,395	84.1	72,936	15.9	462,331
2006	405,457	87.4	58,619	12.6	464,076
2007	417,973	85.8	69,416	14.2	487,389
2008	430,946	85.8	71,387	14.2	502,333

^a Allowances were estimated to be 90 percent of charges.

In the next few sections, we look at three specific types of inpatient utilization: acute-care hospital services, inpatient rehabilitation, and inpatient psychiatric care.

ACUTE-CARE HOSPITAL SERVICES

Allowance-to-Cost Ratios

One measure of the adequacy of the OMFS allowances is to determine the ratio of allowances to the estimated costs of WC stays. Although OMFS allowances follow standard formulae, calculating costs is more challenging in the absence of discharge-level cost data from hospitals. To estimate costs, we applied an overall hospital-specific cost-to-charge ratio to the total charges in the administrative data for each WC record. Table B.3 summarizes this information for all 2008 WC inpatient stays in general acute-care hospitals and for those stays accounting for

at least 1 percent of overall WC payments. A ratio of 1.0 means that the allowances equaled estimated costs. A ratio greater than 1.0 means that allowances exceeded estimated costs, and a ratio of less than 1.0 means that allowances were less than costs. Overall, the estimated allowance-to-cost ratio for 2008 was 1.03, indicating that estimated allowances were 3 percent higher than estimated costs before taking into consideration the pass-through payments for hardware used during complex spinal surgery.² However, there was substantial variation in the average allowance-to-cost ratio by type of stay. Seven types of surgical stays accounting for a significant portion of WC allowances had estimated allowance-to-cost ratios of less than 1.0, while nine had ratios greater than 1.0. Thus, for some types of inpatient stays, the allowance-to-cost ratios indicate that allowances are slightly less than estimated costs, whereas, for other inpatient stays, allowances are considerably higher than estimated costs. For example, the estimated allowance-to-cost ratio for combined anterior/posterior spinal fusion was 1.10, indicating that allowances were 10 percent higher than estimated costs. This finding is consistent with the underlying principle of DRG-based payment systems—that the allowance will exceed costs for some patients and will be less than costs for other patients but that, on average, the allowance will be sufficient to cover the costs of the inpatient stay and provide a reasonable rate of return.

² For comparison, the national private-payer payment-to-cost ratio is estimated at 1.27 in 2008 (MedPAC, 2010). According to MedPAC, the private-payer allowance-to-cost ratio has grown steadily from 1.13 in 2000 largely because hospitals have raised their charges by more than 10 percent each year to increase revenue from private payers based on discounted charges (MedPAC, 2007).

Table B.3
Estimated Allowance-to-Cost Ratios for Acute-Care Inpatient Services,
2008

Type of Inpatient Stay	Average OMFS Allowance (\$)	Estimated Average Cost (\$)	Payment- to-Cost Ratio
ECMO or tracheostomy with MV 96+ hrs or PDX except face, mouth, and neck with major OR procedure	219,747	170,972	1.29
Spinal procedure	23,463	21,538	1.09
Combined anterior/posterior spinal fusion	58,351	53,194	1.10
Spinal fusion except cervical	33,842	36,203	0.93
Wound debridement and skin graft except hand, for musculoskeletal and connective-tissue disorders	34,450	31,105	1.11
Revision of hip or knee replacement	25,114	25,609	0.98
Major joint replacement or reattachment of lower extremity	18,707	19,861	0.94
Cervical spinal fusion	19,168	20,245	0.95
Hip and femur procedures except major joint	16,786	17,224	0.97
Back and neck procedures except spinal fusion	10,862	11,799	0.92
Lower extremity and humerus procedures except hip, foot, and femur	13,848	14,314	0.97
Local excision and removal of internal fixation devices except hip and femur	13,613	11,279	1.21
Medical back problems	7,811	6,938	1.13
Postoperative or posttraumatic infections with OR procedure	24,567	17,601	1.40
Other OR procedures for injuries	20,196	14,716	1.37
Other OR procedures for multiple significant trauma	65,432	61,859	1.06
Other WC inpatient stays	14,504	13,071	1.11
All WC inpatient stays	19,607	19,046	1.03

NOTE: ECMO = extracorporeal membrane oxygenation. MV = mechanical ventilation. PDX = principal diagnosis. OR = operating room.

In the past, concerns have been expressed over the appropriateness of continuing to pass through costs for hardware used during complex spinal surgery. The distribution of the 2008 WC discharges by 2009 MS-DRG for spinal surgeries is shown in Table B.4. We have included the relative weights because they are indicative of the payment differential across the various MS-DRGs.

Most WC patients having spinal surgery are assigned to the MS-DRGs for noncervical spinal fusion (MS-DRGs 459-460), which account for

10 percent of WC discharges and 19 percent of OMFS allowances for inpatient stays under the MS-DRGs. Only 3 percent of these discharges are assigned to the DRG for patients with a major complication or comorbidity (major CC, or MCC); the remaining 97 percent are assigned to a combined DRG for discharges with CC (30 percent) or no CC (68 percent). Similarly, only 1 percent of discharges assigned to the MS-DRGs for cervical spinal fusion (MS-DRGs 471-473) have an MCC. Only 46 discharges were assigned to the highest-weighted MS-DRGs for noncervical spinal surgery for discharges with a diagnosis of spinal curvature, malignancy, or infection or nine or more fusions. The estimated 2008 payments are based on the OMFS allowance and do not include the pass-through payments for spinal hardware.

Table B.4
Distribution of 2008 Workers' Compensation Discharges, by 2009 Medicare Severity-Adjusted Diagnosis-Related Group Eligible for Pass-Through Payments

MS-DRG	Description	Number of Discharges	Estimated 2008 Total Payments (\$)	Percentage of Total Payments	Relative Weights
	Spinal fusion except cervical	2,342	81,240	18.9	
459	With MCC	80	3,840		4.87
460	Without MCC	2,262	77,400		3.49
	Cervical spinal fusion	1,609	31,596	7.3	
471	With MCC	19	616		3.47
472	With CC	215	5,180		2.48
473	Without CC or MCC	1,375	25,800		1.94
	Combined anterior/posterior spinal fusion	818	47,850	11.1	
453	With MCC	45	3,650		8.43
454	With CC	320	19,500		6.58
455	Without CC or MCC	453	24,700		5.70
	Spinal procedures	240	5,621	1.3	
28	With MCC	16	711		4.23
29	With CC	92	2,590		2.84
30	Without CC or MCC	132	2,320		1.76
	Spinal fusion except cervical with spinal curve, malignancy, or infection diagnosis or 9+ fusions	46	2,512	0.6	
456	With MCC	3	206		6.77
457	With CC	24	1,320		5.47
458	Without CC or MCC	19	986		4.94

A total of 179 hospitals performed complex spinal surgeries qualifying for pass-through payments on WC patients in 2008. Half of these hospitals had fewer than ten WC discharges in the relevant MS-DRGs (Table B.5). Eleven hospitals had 100 or more WC discharges for spinal surgery, and another 17 hospitals had 50-99 WC discharges.

Table B.5
Number of Hospitals Performing Spinal Surgeries, by Number of 2008
Workers' Compensation Discharges by Medicare Severity-Adjusted
Diagnosis-Related Group Number of Hospitals, by Number of Workers'
Compensation Discharges

MS-DRG	Number of WC Discharges				Total Number of Hospitals
	>100	50- 99	10- 49	1-9	
Spinal except cervical	2	5	52	101	160
Cervical	1	2	47	97	147
Combined anterior/posterior spinal fusion		3	20	61	84
Spinal procedures or spinal neurostimulators			4	75	79
Spinal fusion except cervical with spinal curvature, malignancy, or infection diagnosis or 9+ fusions				25	25
All spinal surgeries	11	17	69	82	179

Adequacy of Payments for Spinal Surgery

The 1.20 multiplier incorporated in the OMFS allowance for inpatient stays provides a cushion for any additional administrative costs the hospital might incur in caring for a WC patient. Because a substantial portion (about 51 percent) of the Medicare rate used to determine the OMFS composite rate is for devices implanted during spinal surgery (Dalton, Freeman, and Bragg, 2008), the separate pass-through payment mechanism for spinal-hardware costs provides an unnecessary and duplicate allowance.

We evaluate the adequacy of current payments for the pass-through program using two approaches. First, we determine the adequacy of payments through the OMFS fee schedule exclusive of the pass through. We then contrast the resources required for Medicare and WC patients undergoing spinal surgery in 2008. If we observe that WC patients consume fewer resources than Medicare patients despite being reimbursed at 120 percent of the Medicare rate, we might consider the WC allowance to be adequate.

Table B.6 displays the estimated allowance-to-cost ratios for all spinal-surgery MS-DRGs in 2008. The payments exclude the pass-through amount, so these results essentially provide information about the adequacy of allowances if the pass-through mechanism were to be

eliminated. We observe significantly more variation across MS-DRGs, with allowance-to-cost ratios for procedures with major complications tending to be lower. For cervical spinal fusion, allowances were nearly equal to expected costs (allowance-to-cost ratio: 0.97) but, for the most complex spinal procedure category, allowances covered only 76 percent of costs. As mentioned previously, the OMFS allowance is designed to cover the costs of the inpatient stay for the average patient and provide a reasonable rate of return even if allowances will exceed or be less than costs for other patients.

Table B.6
Average Allowances, Estimated Costs, and Allowance-to-Cost Ratios for Medicare Severity-Adjusted Diagnosis-Related Groups Eligible for Pass-Through Payments, 2008

MS-DRG	Description	Average OMFS Allowance (\$)	Estimated Average Cost (\$)	Allowance-to-Cost Ratio
	Spinal fusion except cervical	33,842	36,203	0.93
459	With MCC	46,112	59,590	0.77
460	Without MCC	33,410	35,381	0.94
	Cervical spinal fusion	19,168	20,245	0.95
471	With MCC	32,410	33,320	0.97
472	With CC	23,855	23,255	1.03
473	Without CC or MCC	18,246	19,588	0.93
	Combined anterior/posterior spinal fusion	58,351	53,194	1.10
453	With MCC	80,738	95,378	0.85
454	With CC	61,057	54,228	1.13
455	Without CC or MCC	54,266	48,398	1.12
	Spinal procedures	23,463	21,538	1.09
28	With MCC	44,444	45,880	0.97
29	With CC	28,188	26,892	1.05
30	Without CC or MCC	17,618	14,846	1.19
	Spinal fusion except cervical with spinal curve, malignancy, or infection diagnosis or 9+ fusions	54,653	59,526	0.92
456	With MCC	68,744	90,639	0.76
457	With CC	55,060	61,539	0.89
458	Without CC or MCC	51,914	52,072	1.00

Next, we evaluated the adequacy of the fee-schedule payments for WC patients by contrasting charges, length of stay, and device utilization for WC and Medicare discharges in 2008. We found that, on average, WC

patients require fewer resources than comparable Medicare patients despite the greater use of spinal hardware for WC patients. One measure of the relative costliness is average hospital charges. As seen in Table B.7, across nearly all MS-DRGs, WC patients have lower average charges than Medicare patients have. After adjusting the average charges among Medicare patients (because a higher proportion of Medicare patients are assigned to the more resource-intensive MS-DRGs), we found that average charges per discharge are 6 percent higher than the WC average charges per discharge (\$135,125 versus \$126,491).

Another measure of relative costliness is average length of stay. Across all MS-DRGs, WC patients have a shorter average length of stay than Medicare patients have. The adjusted Medicare average length of stay is 16 percent higher (4.4 days versus 3.8 days) (Table B.7).

With regard to device usage, we are limited to what can be examined using the administrative data. We can count the number of unique implants that are used during spinal surgery but cannot determine the number of units that were used for each type of implant. Table B.8 indicates that WC patients tend to have more implants during spinal surgery despite having fewer levels fused. Taken together, these data indicate that WC patients are less costly on average than Medicare patients, despite using more devices.

Table B.7
Comparison of Workers' Compensation and Medicare Discharges, Charges,
and Length of Stay for Spinal Surgery Medicare Severity-Adjusted
Diagnosis-Related Group, 2008

MS-DRG	Worker's Compensation				Medicare				
	Discharges			Mean Length of Stay (days)	Discharges			Mean Length of Stay (days)	
	Number	Percent- age of Total	Mean Charges (\$) ^a		Number	Percent- age of Total	Mean Charges (\$) ^a		
Spinal fusion except cervical									
459	With MCC	80	—	229,380	8.9	423	—	228,403	9.7
460	Without MCC	2,262	—	133,184	4.2	4,854	—	136,769	4.5
		2,342	46.3	136,493	4.3	5,277	49.4	143,943	4.9
Cervical spinal fusion									
471	With MCC	19	—	135,648	7.2	315	—	174,337	9.2
472	With CC	215	—	91,898	2.7	764	—	116,054	4.5
473	Without CC or MCC	1,375	—	75,624	1.9	1,840	—	83,228	2.5
		1,609	31.8	78,496	2.1	2,919	27.3	101,352	3.7
Combined anterior/posterior spinal fusion									
453	With MCC	45	—	361,613	11.7	203	—	386,221	12.9
454	With CC	320	—	205,531	5.6	439	—	252,181	7.2
455	Without CC or MCC	453	—	175,372	4.4	351	—	180,018	4.7
		818	16.2	197,295	5.3	993	9.3	254,159	7.5
Spinal procedures or spinal neurostimulators									
28	With MCC	16	—	207,489	11.6	239	—	199,318	12.8
29	With CC or Neurostimulator	92	—	106,432	4.3	336	—	118,082	7.4
30	Without CC or MCC	132	—	62,129	2.9	327	—	67,329	3.8
		240	4.7	88,840	4.0	902	8.4	121,391	7.5
Spinal fusion except cervical with spinal curvature, malignancy, or infection diagnosis or 9+ fusions									
456	With MCC	3	—	386,205	13.0	126	—	361,076	15.1
457	With CC	24	—	236,436	6.8	318	—	232,378	7.6
458	Without CC or MCC	19	—	184,464	5.0	157	—	183,405	5.2
		46	0.9	224,737	6.5	601	5.6	246,569	8.6
All spinal-surgery		5,055	100	126,491	3.8	10,692	100.0	145,888	5.3
MS-DRGs									
DRG-adjusted averages				126,491	3.8			135,125	4.4

^a Weighted average using WC number of discharges.

NOTE: Due to rounding, some numbers do not sum to 100.

Table B.8

Comparison of the Number of Unique Types of Spinal-Surgery Implants, by Type of Spinal Fusion, for Workers' Compensation and Medicare Patients

Discharge	Noncervical Spinal Fusion		Cervical Spinal Fusion	
	WC	Medicare	WC	Medicare
Number of discharges	2,342	5,277	1,609	2,919
Unique types of implants per discharge	1.15	0.92	0.68	0.58
Percentage of patients with 2-3 vertebrae fused	88	80	84	72
Percentage patients with 4-8 vertebrae fused	10	19	14	27

INPATIENT HOSPITAL SERVICES EXEMPT FROM THE OFFICIAL MEDICAL FEE SCHEDULE

Inpatient Rehabilitation Services

Medicare exempts inpatient rehabilitation facilities (IRFs) and rehabilitation units of acute-care hospitals from the acute-care payment system. For a facility to have IRF designation, 75 percent of its 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 that takes into account the patient's rehabilitation impairment category, functional status (both motor and cognitive), age, and comorbidities (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 case-mix grouping to which the patient is assigned (which accounts for the difference in cost across the groupings and comorbidity tiers).

Table B.9 summarizes information from the OSHPD data for patients whose expected primary payer was reported as WC in 2003-2005. The number of patients remained about the same over the three-year period, while the mean length of stay declined from 17.0 days in 2003 to 14.3 days in 2005. In 2005, there were 988 discharges in which the type of care was reported as rehabilitation, of which about three-quarters were

discharged from rehabilitation units of acute-care hospitals. There were 17 discharges from facilities that are not participating in the Medicare program.

Table B.9
Characteristics of Discharges from Inpatient Rehabilitation Facilities

Characteristic	2003	2004	2005
Total discharges	1,047	1,030	988
Freestanding hospitals	241	257	250
Units	790	756	721
Other	16	17	17
Source of admission			
Direct admission	127	117	117
Same acute hospital	469	432	425
Different acute hospital	426	459	434
Nonacute transfer	25	22	12
Average charge per stay (\$)	49,529	45,406	51,112
Mean length of stay (days)	17.0	15.1	14.3

About 13 percent of WC 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 averaged \$51,112. Hospital charges are considerably higher than hospital costs. When we applied a facility-specific cost-to-charge ratio to the reported charges on each bill, the average cost was \$16,612 per discharge.

We cannot assess the appropriateness of adapting the Medicare IRF PPO for rehabilitation facility patients because we lack the functional status data needed to classify the WC patients into the appropriate case-mix grouping. The payment rate is determined on a per-case basis, and how the costs to treat Medicare patients (who are predominantly over age 65) compare with those for WC patients (who are typically younger and have fewer comorbidities) cannot be determined from the information we have available to us. We assume that the case mix is quite different (Medicare has predominantly stroke and hip-replacement cases), but what is important is how costs compare for a particular case-mix grouping and comorbidity tier. For acute-care services, studies have shown that WC patients tend to be less costly than Medicare patients. However, we do

not know 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 SB 228, but some analysis of the appropriateness of using the Medicare rates would be advisable before implementing a Medicare-based fee schedule. The necessary information to compute the rate for each rehabilitation facility is available on the CMS website. 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 might 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.

Because Medicare and WC patients are likely to have different lengths of stay, Medicare-based per-case payment rates might 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 the per-case rate by the mean length of stay for the case-mix grouping and 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 WC programs and the federal WC program use this payment methodology to pay for services furnished by hospitals that are excluded from Medicare's acute-care PPS. It ensures 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 WC patients (e.g., the facility's cost-to-charge ratio times 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 ensures that there will be not access issues or excessive payments. This option is most appropriate if there is skepticism about both the completion of the assessment instrument and the appropriateness of the Medicare-based payments for rehabilitation services furnished to California's injured workers. 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 drawback to this charge-based payment approach is that it contains incentives to deliver unnecessary care and to escalate charges.

Inpatient Psychiatric Services

Medicare separately certifies psychiatric hospitals and distinct psychiatric units of acute-care hospitals. The eligibility rules require that a psychiatric unit admit only those patients who have a principal diagnosis listed in the Diagnostic and Statistical Manual of Mental Disorders or classified in Chapter Five ("Mental Disorders") of the International Classification of Diseases, 9th Revision, Clinical Modification (ICD-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 DRGs that are used under the acute-care PPS (that take into account the patient's principal and secondary diagnoses and surgical procedures). Payment is made for all 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 difference in expected costs. Each of 15 psychiatric DRGs has its own adjustment factor that is applied to the standard per diem rate.³ Other case-level adjustments apply for certain comorbidities, 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 eight days in the stay receive a higher per diem payment (e.g., the adjustment factor for day 4 is 1.04); days 11 and after receive a lower per diem

³ DRGs for Major Diagnostic Category (MDC) 19 (mental diseases and disorders) and MDC 20 (alcohol or drug use and alcohol-induced organic mental disorders).

payment (e.g., the adjustment factor for day 20 is 0.95), and a higher adjustment factor applies if the psychiatric stay was not preceded by an acute-care inpatient stay.

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 B.10). 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 5 percent of patients were transferred from an acute-care hospital, compared with almost 20 percent in 2005. Most inpatient stays are concentrated in a few DRG with the most-common admissions being for psychoses.

Table B.10
Characteristics of Workers' Compensation Discharges from Psychiatric Hospitals or Units, 2003-2005

Characteristic	2003	2004	2005
Total discharges	541	551	323
Freestanding hospitals	74	77	56
Units	347	338	235
Other	120	136	32
Source of admission			
Direct admission	517	522	282
Same acute hospital	12	19	29
Different acute hospital	8	8	8
Nonacute transfer	4	2	4
Average charge per stay (\$)	23,145	23,726	24,837
Mean length of stay (days)	12.1	12.7	12.5

A major determinant of total costs 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 some case-level adjustments. As a result, the payment system does not raise the same appropriateness issues as the payment system for rehabilitation facilities and should be suitable for WC patients.

Implementation of the Medicare-based fee schedule with up to a 120-percent multiplier would conform most closely to what was anticipated in

SB 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 no fee schedule (in which case payment rates must be negotiated) or the Medicare-based fee schedule but would create incentives for unnecessary services and escalating charges.

Long-Term Care Hospitals

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 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 colocated providers. 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 using averages, so that, although some patients might 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 cases at each hospital for profits on some patients to be offset by losses for others; as a result, there is strong likelihood that a long-term care hospital will have significant profits or losses on the services it provides to WC patients and that the impact will be different from year to year.

APPENDIX C

PAYMENTS FOR AMBULATORY SURGERY FACILITY SERVICES

The work described in this appendix examined changes in the volume and mix of ambulatory surgery facility services over 2005–2007. The purpose of the appendix is to describe the data and methodology used in the analysis and to provide more-detailed findings than those presented in Chapter Three of the monograph. 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 versus ASC), and payments.

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 with services performed in ASCs?
- According to the discharge disposition on the records, are there differences in postsurgery 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 with those provided 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 physicians 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 nonhospital settings. 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.
- 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.

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 (MIRCal) system. 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.⁴ These transaction-

⁴ The documentation includes an exception report for facilities that were unable to comply with full reporting requirements. We did not

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 ages 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:

- We assigned relative weights to each APC.
- We applied the discounting rules for multiple surgical procedures and summed the relative weights for each record.
- To obtain the total estimated amount allowed under the OMFS for each record, 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. We used a 1.22 multiplier and did not compute outlier payments for individual encounters. In the aggregate, outlier payments are 2 percent of standard payment amounts. In lieu of APC-specific outlier payments, the OMFS allows ASCs to elect to be paid 1.22 times the standard rate.

In addition to the transaction-level reporting, OSHPD requires every licensed specialty clinic (e.g., ASC) to submit an annual utilization report by February 15 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. The data are submitted to OSHPD through a web-based reporting system known as ALIRTS (Automated Licensing Information and Report Tracking System). After all individual clinic reports are

identify any problems of concern for our analyses. The most frequently noted problem was a facility's inability to report race and ethnicity codes.

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 2005 annual 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 have 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.⁵

RESULTS

Distribution of Ambulatory Surgery Procedure Volume for Workers' Compensation 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 average number of services (APCs) per encounter increased (from 1.6 to 1.8 per encounter), resulting in an increase in the total number of APCs reported for WC patients for the period. For surgical procedures only, the number of reported APCs increased from 179,128 to 183,005, and the number of surgical APCs per encounter increases from 1.6 to 1.7. Each year, about 15,000-16,000 services grouped to APCs for which a facility fee was not payable. These services are discussed in the section titled "Services Commonly Performed in a Physician Office."

Each of nine services accounts for at least 1 percent of ambulatory surgery procedures (Table C.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

⁵ Eight facilities, four of which closed during the year, did not submit final financial data for the annual utilization report. The remaining facilities were nonrespondents to the annual utilization report.

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.

Table C.1
Ambulatory Surgery Procedures Accounting for at Least 1 Percent of
Workers' Compensation Volume, 2005-2007

Procedure	2005		2006		2007	
	Number	Percent- age of Total	Number	Percent- age of Total	Number	Percent- age of Total
Surgical APC						
Nerve injection	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 procedure	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 procedure	8,882	4.96	8,782	4.93	8,351	4.56
Hernia/hydrocele procedure	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 for 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 services with no facility fee	16,646		14,984		16,069	
Total APCs	195,774		193,253		199,074	
Total WC encounters	118,869		114,791		109,363	

NOTE: Due to rounding, some numbers do not sum to 100.

**Distribution of Maximum Allowable Fees for Surgical Services for
Workers' Compensation Patients**

Table C.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 during the period. Each of sixteen types of services, most of which were also high volume, accounted for at least 1 percent of payments in one or more of the three years. Three types of services each accounted for 10 percent or more of the maximum allowable fees in 2007 (and the earlier years): arthroscopy (46 percent),

musculoskeletal procedures except hand and foot (11 percent), and nerve injections (10 percent). Three types of procedures on the high-cost listing each accounted for less than 1 percent of volume but involved relatively expensive devices: implantation of a neurological device, percutaneous implantation of neurostimulator electrodes (excluding cranial nerve), and implantation of a drug-infusion device.

Table C.2

Ambulatory Surgery Procedures Accounting for at Least 1 Percent of Maximum Allowable Fees, 2005-2007

Procedure	2005		2006		2007	
	Allowances (\$)	Percentage of Total	Allowances (\$)	Percentage of Total	Allowances (\$)	Percentage of Total
Surgical APCs (Collapsed)						
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 injection	22,203,035	9.9	23,366,655	9.7	25,569,782	9.9
Nerve procedure	16,647,419	7.4	17,935,293	7.4	15,840,326	6.1
Hernia/hydrocele procedure	9,504,527	4.3	8,752,418	3.6	8,896,121	3.4
Hand musculoskeletal procedure	9,048,705	4.0	9,945,042	4.1	9,716,286	3.8
Treatment of 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
Laminotomy or laminectomy	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 procedure	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

Procedure	2005		2006		2007	
	Allowances (\$)	Percentage of Total	Allowances (\$)	Percentage of Total	Allowances (\$)	Percentage of Total
Surgical APCs (Collapsed)						
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
NOTE: Due to rounding, some numbers do not sum to 100.						

Comparison of Patient Disposition Upon Discharge, by Setting

Table C.3 shows the disposition of WC patients following ambulatory surgery, by setting, in 2005. Most cases, 97.9 percent, 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 percent versus 0.05 percent, respectively; $p < 0.001$). When we looked at this issue by health service area, we found considerable variation in the proportion of patients admitted to short-term care hospitals following ambulatory surgery. In most areas, less than 1 percent was admitted following ambulatory surgery. The rates were significantly higher in three areas: midcoast (2.5 percent), West Bay (2.7 percent), and Santa Clara (18.5 percent). 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 C.3
Distribution of Disposition Codes Among Workers' Compensation Patients
After Ambulatory Surgery, 2005**

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

Table C.4
Comparison of Intensity of Ambulatory Surgical Services Provided to
Workers' Compensation and Non-Workers' Compensation Patients Ages 18-64
(excluding Medicare and Medicaid patients), 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 encounter	1.7	1.4	1.7	1.4	1.7	1.4
Average relative weight per encounter	36.1	25.3	39.1	28.1	34.7	21.4

Table C.4 compares the resource intensity of ambulatory surgical services provided in facility settings to WC patients to non-WC patients ages 18-64 except for 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, we find that the average relative weight per encounter is 42 percent higher for WC patients (36.1 versus 25.3). For both patient populations, more resource-intensive encounters are provided in the hospital setting than in freestanding ASCs. 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 with 59 percent of surgical services performed on the non-WC comparison group (Table C.5). Although 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 with 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 C.5
Comparison of Proportion of Services Provided in Hospital Settings for Workers' Compensation and Non-Workers' Compensation Patients Ages 18-64 (excluding Medicare and Medicaid patients), 2007

Type of Service	Percentage of Services in Hospital	
	WC	Non-WC
Nerve injection	21.4	34.1
Arthroscopy	31.3	54.8
Nerve procedure	32.6	63.3
Musculoskeletal procedure except hand and foot	30.8	62.7
Hand musculoskeletal procedure	35.4	61.4
Hernia/hydrocele procedure	57.1	80.0
Excision/biopsy	38.4	69.3
Skin repair	43.5	53.5
Treatment of fracture/dislocation	43.9	71.4
Percutaneous implantation of neurostimulator electrodes, excluding cranial nerve	35.9	71.4
Laminotomy or laminectomy	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 includes only procedures reported as ambulatory surgical procedures performed in hospitals and licensed ASCs. Data are not readily available to include in the comparison ambulatory surgical procedures that are performed in physician offices. 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. 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 Performed in a Physician Office

As noted earlier, 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.) Although 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.⁶ 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 C.6). 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). Although most non-WC office-based services were eye, ear, nose, or throat procedures, 3.1 percent of the nerve injections were office-based procedures.

⁶ Prior to January 1, 2008, Medicare excluded from its list of ASC-covered procedures those procedures that are commonly performed in a physician office. The purpose of the exclusion was to 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 does 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.

Table C.6
Office-Based Procedures Performed in Ambulatory Facility Settings, 2007

Description	WC			Non-WC		
	Total	Percent- age ASC	Percent- age Hospital	Total	Percent- age ASC	Percent- age Hospital
Total office procedures	1,637	82.7	17.3	10,338	44.6	55.4
Percentage of total surgical procedures	0.9			0.6		
Office-based nerve injection	1,579	84.9	15.1	4,646	65.7	34.3
Percentage of total nerve injections	2.5			3.1		

Inpatient-Only Procedures

The Medicare program has determined that, for Medicare patients, certain procedures should be performed only on an inpatient basis. The inpatient list has been incorporated into the OMFS; however, payers may approve the procedures in an ambulatory surgery setting on a case-by-case basis at a negotiated rate.⁷ 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 C.7). 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 with 14 percent for all non-WC inpatient procedures and 37 percent for non-WC spinal procedures.

⁷ 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.

**Table C.7
Inpatient Procedures Performed in Ambulatory Facility Settings, 2007**

Description	WC			Non-WC		
	Total	Percentage ASC	Percentage Hospital	Total	Percentage ASC	Percentage Hospital
Total	705	80.0	20.0	5,730	14.2	85.8
inpatient procedures						
Percentage 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 procedure	26	96.2	3.8	57	24.6	75.4

Services Payable Under the Official Medical Fee Schedule for Physician Services

About 15,000-16,000 procedures were reported annually for 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 nonsurgical 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 interpretation of the results. Under the OMFS rules, the services are not eligible for a facility fee 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, under which payments differ across ambulatory sites for facility costs related to providing a service:

- Nonsurgical 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 no longer applicable unless no primary procedure is performed.
- Medicare covers a nonsurgical procedure in an ASC only if it is 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.

Ambulatory Surgery Center Patient Workload and Profitability

Overall, WC patients accounted for 4.7 percent of procedures reported for ambulatory surgery encounters in 2005 (Table C.8). With

respect to high-volume WC procedures, the proportion performed on WC patients varied, ranging from 3.8 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 C.8
Workers' Compensation Distribution of Workers' Compensation Encounters
as Percentage of Total Encounters in Ambulatory Surgery Centers, 2005

Type of Service	Number of Services, All Patients	WC as Percentage of Services
Nerve injection	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 procedure	45,517	31.6
Level I	42,329	32.1
Level II	3,188	24.2
Musculoskeletal procedure 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 procedure	49,086	18.1
Level I	35,974	19.5
Level II	13,112	14.1
Hernia/hydrocele procedure	90,954	6.2
Open/percutaneous treatment of 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	3,072,043	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 C.9). The average WC load was 15.1 percent, and the median was 6.7 percent. In comparison, the average WC patient load in hospital ambulatory surgery settings was 4.2 percent and the mean was 1.8 percent (data not shown). Sixty-four ASCs had WC patient loads greater than 20 percent. These are the facilities that would have been most affected by the changes in the OMFS.

Table C.9
Distribution of Workers' Compensation Encounters as Percentage of Total Encounters in Ambulatory Surgery Centers, 2005

Percentage of WC Encounters	Number of ASCs
<10	182
10 < 20	50
20 < 30	16
30 < 40	15
40 < 50	9
≥50	24
Total	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 (Wynn, Hussey, and Ruder, forthcoming).⁸ Their preliminary findings suggest that California ASCs' costs were 66-71 percent of estimated HOPD costs in 2008, depending on whether professional contract expenses are included in the ASC cost measure. The professional contract expenses (e.g., for anesthesiologists) are reported as a facility cost but can be separately billable to some payers as a professional service. Multispecialty California ASCs had higher costs than single-specialty ASCs had, but the differences were slight.

⁸ In reporting their findings, 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.

APPENDIX D

EMERGENCY DEPARTMENT SERVICES

The work described in this appendix examined changes in the volume and mix of hospital emergency facility services from 2005 to 2007. The purpose of the appendix is to describe the data and methodology used in the analysis and to provide more-detailed findings than those presented in Chapter Four of the monograph. We do not have access to pre-2005 trend data that could be used to investigate the changes that have occurred in the use of hospital emergency services since implementation of the reform provisions.

STUDY QUESTIONS

We examined the following questions in our analyses:

- What were the most-common conditions treated in EDs?
- To what extent were ED encounters related to injuries? What is the likelihood that other visits were "avoidable" ED services? Does the pattern vary across counties?
- What percentage of ED encounters resulted in a hospital admission? Does the pattern vary across counties?
- What are the high-volume services provided to WC patients in EDs?
- What were the maximum allowable fees for ED services? To what extent were services subject to the OMFS for outpatient services versus the OMFS for physician services and for laboratory services?

DATA AND METHODS

We used administrative data obtained from OSHPD for 2005–2007 ED encounters for our analyses. OSHPD requires each hospital with a licensed ED in California to submit an encounter record each time a patient is treated in the ED. Hospitals report their encounter data via 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.⁹ These transaction-level data for each ED 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). Records include both encounters that resulted in an inpatient admission and those that did not. Further, the records include diagnostic tests and other services that a patient registered in the hospital ED received elsewhere in the hospital during the encounter.

We used the expected payer variable to identify WC patients and developed summary statistics for WC patients reported in the ED data. We examined the diagnosis codes for all WC encounters and separately for those encounters with and without an E-code. The E-codes describe the external cause of injuries, poisonings, and adverse effects. Hospitals are instructed to report the E-code on the record for the encounter during which the injury, poisoning, or adverse effect was first diagnosed or treated by the hospital so that the E-codes can be used to distinguish between initial and follow-up treatment for injuries and poisonings. A limitation of using the E-codes is that hospital coding practices can vary.

We used an algorithm developed by the New York University (NYU) Center for Health and Public Service Research to identify potentially "avoidable" encounters (Billings, Parikh, and Mijanovich, undated). The algorithm first assigns encounters to one of four categories based on the principal diagnosis: injury, psychiatric, substance abuse, and other. For the "other" category, the algorithm then uses the diagnosis to assign a specific percentage of each encounter representing the likelihood that the care was

- nonemergent (care not needed within 12 hours)

⁹ The documentation includes an exception 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 and ethnicity codes. However, as noted, some facilities used imprecise coding that affects the findings.

- emergent or primary care treatable (care needed within 12 hours but could be provided by a primary-care physician)
- emergent or ED care needed, preventable or avoidable (ED care required but was potentially avoidable if timely and effective primary care had been received during the episode of illness)
- emergent or ED care needed, not preventable (ED care required and ambulatory care could not have prevented the condition).

The proportion of encounters assigned to each category serves as an indicator of whether there might be access or quality issues that are causing WC patients to use EDs excessively.

We grouped the services reported as part of a WC ED encounter into APCs. The groupings serve two purposes. First, APCs classify the type of services being furnished in conjunction with ED visits into clinically coherent groups with comparable costs. Second, APCs are used to compute the estimated facility fee allowance for each record that reported ED visits or surgical procedures in the OSHPD data using the following method and information from the DWC website:

1. We assigned relative weights to each APC for emergency visits (CPT codes 99281-99285) and surgical services (CPT codes 10040-69990 with status code indicators "S", "T", or "X").
2. We applied the discounting rules for multiple surgical procedures and summed the relative weights for each record.
3. To obtain the total estimated amount allowed under the OMFS for each record, 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. We used a 1.22 multiplier and did not compute outlier payments for individual encounters. In the aggregate, outlier payments are 2 percent of standard payment amounts. In lieu of APC-specific outlier payments, the OMFS allows ASCs to elect to be paid 1.22 times the standard rate.

In addition, we separately examined other services provided during an ED encounter that are payable under the OMFS for physician services or the clinical laboratory services. Most of the services payable under the OMFS for physician services are diagnostic tests with separate

allowances for the technical component (the cost of performing the test) and for the professional component (physician supervision and interpretation of the results). We computed the allowance for the technical component only. For clinical laboratory tests, we used the amounts payable under the OMFS for these tests. Pricing the services subject to the OMFS for physician and nonphysician professional services was not straightforward. The OMFS uses an outdated 1997 version of the CPT codes, and some codes (most notably, the injection and infusion codes that group to the drug-administration APCs) have undergone substantial change. For these, we needed to make assumptions regarding how the reported codes would crosswalk to the OMFS CPT codes. We dropped low-volume procedures that either did not have an established allowance ("By Report") under the OMFS or did not have a readily identifiable code in the CPT 1997 version that corresponded to the CPT codes used by the hospitals to report ED services in 2005–2007.

RESULTS

Between 2005 and 2007, the number of annual WC ED encounters reported in the OSHPD data declined 14.1 percent, from 186,970 to 160,600 encounters (Table D.1). The decline is higher than the reduction in the number of reported WC injuries and illnesses, which fell 5.6 percent during the period. The decline in the number of encounters with E-codes for injuries (5.9 percent) is consistent with the reduction in WC injuries and illnesses. Encounters without E-codes declined 27.2 percent. We are unable to determine whether this decline reflects fewer medical services or a shift in where care is provided.

Table D.1
Summary of Emergency Department Encounter Volume, 2005–2007

Encounter	2005		2006		2007	
	Number	Percent- age	Number	Percent- age	Number	Percent- age
Total encounters	186,970	100.0	176,349	100.0	160,600	100.0
With E-codes	115,174	61.6	114,980	65.2	108,325	67.5
Without E-codes	71,796	38.4	61,369	34.8	52,275	32.6

NOTE: Due to rounding, some numbers do not sum to 100.

In the analyses that follow, we found that the patterns of ED care were fairly similar over the period and therefore report only the results for 2007.

Emergency Department Encounter Volume and Discharge Destinations, by County

Table D.2 shows the distribution of encounters across counties in 2007 and the percentage of encounters with reported E-codes. Statewide, E-codes were reported for 67 percent of encounters. The proportion of encounters with E-codes in 2007 (67.5 percent) is comparable to the percentage of claims with injuries identified through the NYU algorithm (65 percent), but there are notable differences across the counties that might reflect underreporting of E-codes. Hospitals in two other rural counties (Sutter and Yuba) reported E-codes for less than 25 percent of the ED encounters. This appears to be a coding issue in that these counties did not have a disproportionately low percentage of encounters for injuries using the NYU algorithm (Table D.4). More than 75 percent of the ED encounters were reported as first-time visits for injuries in five individual rural counties and in Alpine, Inyo, Mariposa, and Mono counties combined.

Table D.3 shows the discharge destinations of WC patients following an ED encounter in 2007. Statewide, 98 percent were sent home, while less than 1 percent was admitted as an inpatient. The remaining discharges went to a mix of destinations, including death, discharges to home with home health services, and discharges to nursing facilities. More than half of the discharges in this category were reported as patients who left against medical advice or who discontinued care. The atypically high percentage of discharges in this category in some counties is attributable to a large number of discharges reported as "other" without any specification of the actual discharge destination of the patient following ED care.

Table D.2
2007 Workers' Compensation Patient Emergency Department Encounters and
Percentage with E-Codes, by County, 2007

County	Total WC Encounters	Percentage of Encounters Statewide	Percentage of County Encounters with E-Codes
All counties	160,600	100.00	67.45
Alameda	6,671	4.15	66.36
Amador	474	0.30	73.84
Butte	1,404	0.87	67.66
Calaveras	416	0.26	76.20
Contra Costa	5,728	3.57	66.29
Del Norte	161	0.10	59.63
El Dorado	1,370	0.85	73.07
Fresno	4,514	2.81	72.95
Humboldt	1,448	0.90	72.24
Imperial	1,998	1.24	63.76
Kern	1,731	1.08	75.97
Kings	860	0.54	77.09
Lake	1,024	0.64	71.68
Lassen	432	0.27	78.24
Los Angeles	30,389	18.92	68.74
Madera	620	0.39	68.06
Marin	1,054	0.66	60.44
Mendocino	1,520	0.95	74.67
Merced	1,202	0.75	65.39
Monterey	2,627	1.64	57.18
Napa	1,490	0.93	74.03
Nevada	852	0.53	69.48
Orange	9,551	5.95	63.53
Placer	1,268	0.79	72.24
Riverside	8,251	5.14	67.99
Sacramento	5,100	3.18	69.59
San Benito	552	0.34	62.14
San Bernardino	7,541	4.70	69.61
San Diego	14,237	8.86	59.79
San Francisco	2,776	1.73	75.25
San Joaquin	4,125	2.57	77.65
San Luis Obispo	1,655	1.03	65.20
San Mateo	3,321	2.07	67.12
Santa Barbara	965	0.60	66.53
Santa Clara	6,648	4.14	64.65
Santa Cruz	1,180	0.73	71.02
Shasta	1,022	0.64	57.34
Siskiyou	391	0.24	72.63
Solano	2,531	1.58	74.87
Sonoma	3,401	2.12	68.01
Stanislaus	3,495	2.18	71.79
Sutter	713	0.44	21.46

County	Total WC Encounters	Percentage of Encounters Statewide	Percentage of County Encounters with E-Codes
Tehama	463	0.29	58.75
Tulare	2,235	1.39	73.42
Tuolumne	708	0.44	70.34
Ventura	3,612	2.25	63.07
Yolo	915	0.57	74.32
Yuba	670	0.42	20.15
Alpine, Inyo, Mariposa, and Mono combined	629	0.39	75.99
Del Norte, Modoc, Plumas, and Sierra combined	616	0.38	68.34
Colusa, Glenn, and Trinity Combined	688	0.43	73.26
Unspecified	3,356	2.09	71.16

NOTE: Due to rounding, some numbers do not sum to 100.

Table D.3
Workers' Compensation Patient Destinations Following an Emergency
Department Encounter, by County

County	Percentage of County Encounters Discharged to		
	Inpatient		
	Home	Hospital	Other
All counties	98.30	0.57	1.13
Alameda	98.20	0.58	1.21
Amador	99.37	0.21	0.42
Butte	99.07	0.36	0.57
Calaveras	97.84	0.72	1.44
Contra Costa	99.15	0.40	0.45
Del Norte	96.89	1.86	1.24
El Dorado	98.18	0.36	1.46
Fresno	98.23	1.06	0.71
Humboldt	98.83	0.55	0.62
Imperial	98.55	0.60	0.85
Kern	97.11	1.04	1.85
Kings	97.91	1.05	1.05
Lake	98.24	1.07	0.68
Lassen	97.45	2.31	0.23
Los Angeles	98.48	0.41	1.12
Madera	97.58	1.77	0.65
Marin	99.43	0.28	0.28
Mendocino	98.55	1.12	0.33
Merced	98.09	1.33	0.58
Monterey	98.93	0.30	0.76
Napa	98.59	0.81	0.60
Nevada	98.83	0.47	0.70
Orange	98.82	0.58	0.61
Placer	99.29	0.47	0.24
Riverside	98.50	0.84	0.67
Sacramento	98.33	0.51	1.16
San Benito	98.01	0.72	1.27
San Bernardino	98.10	0.62	1.27
San Diego	98.55	0.42	1.03
San Francisco	99.39	0.11	0.50
San Joaquin	97.33	0.82	1.84
San Luis Obispo	98.91	0.91	0.18
San Mateo	98.31	0.18	1.51
Santa Barbara	98.14	0.62	1.24
Santa Clara	96.42	0.38	3.20
Santa Cruz	98.98	0.00	1.02
Shasta	98.92	0.29	0.78
Siskiyou	100.00	0.00	0.00
Solano	98.66	0.63	0.71
Sonoma	99.06	0.53	0.41
Stanislaus	98.14	0.72	1.14
Sutter	97.06	0.56	2.38
Sutter	97.06	0.56	2.38

County	Percentage of County Encounters Discharged to		
	Inpatient		
	Home	Hospital	Other
Tehama	99.14	0.65	0.22
Tulare	97.85	0.72	1.43
Tuolumne	98.31	0.56	1.13
Ventura	98.20	0.25	1.55
Yolo	98.47	0.77	0.77
Yuba	97.46	0.30	2.24
Alpine, Inyo, Mariposa, and Mono combined	82.67	0.79	16.53
Del Norte, Modoc, Plumas, and Sierra combined	97.40	1.95	0.65
Colusa, Glenn, and Trinity combined	97.97	1.45	0.58
Unspecified	97.74	0.95	1.31

Classification of Emergency Department Encounters

Table D.4 shows the distribution of encounters for injuries and other conditions by county in 2007. The table excludes 2,212 encounters (0.75 percent) attributable to psychiatric and drug- and alcohol-related conditions. The NYU algorithm classifies 65 percent of encounters as injuries, which is comparable to the 67 percent reported with E-codes. Most counties are within one standard deviation of the average percentage of encounters attributable to injuries. Counties with atypically high percentages of encounters for injuries include both urban (San Francisco, Fresno, Napa, Yolo) and rural (Amador) counties. Similarly, the counties with atypically low percentages of WC encounters attributable to injuries include both urban (San Diego, Monterey, Ventura, Shasta) and rural (Imperial, Tehama) counties.

Table D.4
Percentage of 2007 Workers' Compensation Encounters for Injuries and
Other Conditions, by County

County	Total Count	Injury		Other ^a	
		Count	Percent- age	Count	Percent- age
All counties	160,600	104,258	64.9	55,130	34.3
Alameda	6,671	4,464	66.9	2,151	32.2
Amador	474	343	72.4	129	27.2
Butte	1,404	865	61.6	526	37.5
Calaveras	416	273	65.6	141	33.9
Contra Costa	5,728	3,780	66.0	1,898	33.1
Del Norte	161	101	62.7	59	36.6
El Dorado	1,370	933	68.1	428	31.2
Fresno	4,514	3,205	71.0	1,280	28.4
Humboldt	1,448	959	66.2	483	33.4
Imperial	1,998	1,167	58.4	825	41.3
Kern	1,731	1,207	69.7	517	29.9
Kings	860	608	70.7	245	28.5
Lake	1,024	689	67.3	334	32.6
Lassen	432	300	69.4	129	29.9
Los Angeles	30,389	20,069	66.0	10,068	33.1
Madera	620	395	63.7	218	35.2
Marin	1,054	703	66.7	342	32.4
Mendocino	1,520	1,046	68.8	463	30.5
Merced	1,202	761	63.3	434	36.1
Monterey	2,627	1,334	50.8	1,281	48.8
Napa	1,490	1,097	73.6	388	26.0
Nevada	852	563	66.1	280	32.9
Orange	9,551	5,856	61.3	3,606	37.8
Placer	1,268	871	68.7	388	30.6
Riverside	8,251	5,353	64.9	2,836	34.4
Sacramento	5,100	3,380	66.3	1,674	32.8
San Benito	552	305	55.3	241	43.7
San Bernardino	7,541	4,964	65.8	2,513	33.3
San Diego	14,237	8,057	56.6	6,064	42.6
San Francisco	2,776	2,054	74.0	701	25.3
San Joaquin	4,125	2,828	68.6	1,264	30.6
San Luis Obispo	1,655	1,029	62.2	617	37.3
San Mateo	3,321	2,354	70.9	953	28.7
Santa Barbara	965	597	61.9	359	37.2
Santa Clara	6,648	4,232	63.7	2,377	35.8
Santa Cruz	1,180	729	61.8	444	37.6
Shasta	1,022	550	53.8	463	45.3
Siskiyou	391	255	65.2	133	34.0
Solano	2,531	1,794	70.9	724	28.6
Sonoma	3,401	2,404	70.7	959	28.2
Stanislaus	3,495	2,382	68.2	1,086	31.1
Sutter	713	468	65.6	242	33.9
Tehama	463	256	55.3	201	43.4
Tulare	2,235	1,522	68.1	698	31.2
Tuolumne	708	474	66.9	233	32.9

County	Total Count	Injury		Other ^a	
		Count	Percent- age	Count	Percent- age
Ventura	3,612	2,112	58.5	1,481	41.0
Yolo	915	651	71.1	255	27.9
Yuba	670	402	60.0	262	39.1
Alpine, Inyo, Mariposa, and Mono combined	629	410	65.2	217	34.5
Del Norte, Modoc, Plumas, and Sierra combined	616	383	62.2	230	37.3
Colusa, Glenn, and Trinity combined	688	476	69.2	210	30.5
Unspecified	3,356	2,248	67.0	1,080	32.2

^a Excludes 1,212 discharges for psychiatric (976) and alcohol- (190) and drug-related (86) conditions.

The algorithm classified 34 percent of the 2007 WC encounters into the "other" category, i.e., encounters that were not for an injury, psychiatric, or drug- or alcohol-related condition. The algorithm further classified the "other" encounters into the categories shown in Table D.5. Nearly 30 percent of the "other" encounters could not be classified. The following diagnoses were reported most frequently for the unclassified encounters:

- imprecise diagnosis codes, i.e., use of "not otherwise specified" and "not elsewhere classifiable" diagnosis codes (35 percent)
- removal of sutures and surgical dressings (27 percent)¹⁰
- observation (11 percent)
- history of exposure to hazardous body fluid (7 percent)
- serous conjunctivitis (3 percent)
- meningococcus contact (3 percent).

¹⁰ The CPT coding rules consider suture removal "normal, uncomplicated follow-up care" as part of the surgical package. It is not separately billable as a physician service unless a doctor removes sutures inserted by another physician. Follow-up care is not packaged into the Medicare payment for hospital outpatient facility services. Instead, hospitals are instructed to bill a visit code for follow-up services, such as suture removal.

Table D.5
Number and Percentage of Workers' Compensation 2007 Encounters in the
"Other" Category, by Classification Type

County	Emergent									
	Nonemergent		Primary Care Treatable		Need ED Care, Preventable		Need ED Care, Not Preventable		Unclassified	
	Count	Percent-age	Count	Percent-age	Count	Percent-age	Count	Percent-age	Count	Percent-age
All counties	20,253	36.2	12,324	22.0	1,348	2.4	5,534	9.9	16,690	29.5
Alameda	760.2	35.3	496.2	23.1	74.2	3.5	266.4	12.4	554	25.8
Amador	47.3	36.6	21.4	16.6	1.7	1.3	15.7	12.2	43	33.3
Butte	252.0	47.9	95.6	18.2	14.9	2.8	52.5	10.0	111	21.1
Calaveras	42.0	29.8	24.3	17.2	5.6	4.0	18.1	12.8	51	36.2
Contra Costa	92.3	42.5	35.8	16.5	3.8	1.8	19.1	8.8	66	30.4
Del Norte	749.7	39.5	394.2	20.8	50.1	2.6	238.0	12.5	466	24.6
El Dorado	21.0	35.6	14.4	24.3	1.4	2.3	7.3	12.4	15	25.4
Fresno	161.9	37.8	68.9	16.1	13.9	3.2	43.3	10.1	140	32.7
Humboldt	409.0	32.0	329.7	25.8	39.3	3.1	181.0	14.1	321	25.1
Imperial	213.0	44.1	96.7	20.0	18.3	3.8	56.0	11.6	99	20.5
Kern	368.9	44.7	150.1	18.2	12.0	1.5	70.9	8.6	223	27.0
Kings	160.3	31.0	100.4	19.4	18.9	3.7	60.4	11.7	177	34.2
Lake	95.3	38.9	45.8	18.7	7.7	3.2	26.2	10.7	70	28.6
Lassen	147.8	44.3	51.1	15.3	5.3	1.6	35.8	10.7	94	28.1
Los Angeles	42.4	32.9	22.3	17.3	3.0	2.4	21.3	16.5	40	31.0
Madera	4,009.4	39.8	2,024.3	20.1	203.4	2.0	853.8	8.5	2,977	29.6
Marin	85.6	39.3	46.7	21.4	5.9	2.7	27.7	12.7	52	23.9
Mendocino	104.5	30.6	67.5	19.7	13.7	4.0	35.2	10.3	121	35.4
Merced	186.0	40.2	90.8	19.6	19.5	4.2	50.7	10.9	116	25.1
Monterey	202.9	46.7	84.5	19.5	12.8	3.0	42.8	9.9	91	21.0
Napa	392.0	30.6	255.1	19.9	12.1	0.9	120.8	9.4	501	39.1
Nevada	146.2	37.7	70.9	18.3	9.6	2.5	46.3	11.9	115	29.6
Orange	68.3	24.4	43.2	15.4	9.7	3.5	25.8	9.2	133	47.5
Placer	95.4	41.5	41.0	17.8	6.2	2.7	25.4	11.0	62	27.0
Riverside	100.4	47.8	35.7	17.0	2.9	1.4	20.1	9.5	51	24.3
Sacramento	1,102.9	30.6	1,157.0	32.1	94.1	2.6	308.9	8.6	943	26.2
San Benito	105.4	27.2	64.1	16.5	9.7	2.5	50.9	13.1	158	40.7
San Bernardino	1,064.6	37.5	648.9	22.9	69.9	2.5	265.6	9.4	787	27.8
San Diego	631.2	37.7	307.9	18.4	43.1	2.6	212.9	12.7	479	28.6
San Francisco	93.0	38.6	46.4	19.3	8.0	3.3	27.6	11.5	66	27.4
San Joaquin	953.4	37.9	496.2	19.7	58.7	2.3	266.7	10.6	738	29.4
San Luis Obispo	1,793.6	29.6	1,592.6	26.3	108.7	1.8	392.2	6.5	2,177	35.9
San Mateo	251.7	35.9	150.1	21.4	20.5	2.9	89.8	12.8	189	27.0
Santa Barbara	491.2	38.9	212.9	16.8	27.1	2.1	120.8	9.6	412	32.6
Santa Clara	230.4	37.3	144.3	23.4	14.3	2.3	65.1	10.5	163	26.4
Santa Cruz	301.3	31.6	186.0	19.5	31.6	3.3	99.1	10.4	335	35.2
Shasta	145.3	40.5	70.0	19.5	7.7	2.1	43.0	12.0	93	25.9
Siskiyou	943.0	39.7	558.3	23.5	46.7	2.0	253.0	10.6	576	24.2
Solano	167.4	37.7	77.3	17.4	7.9	1.8	37.4	8.4	154	34.7
Sonoma	137.2	29.6	75.5	16.3	16.2	3.5	32.1	6.9	202	43.6
Stanislaus	56.9	42.8	30.1	22.6	4.4	3.3	14.6	11.0	27	20.3
Sutter	285.3	39.4	144.4	20.0	16.5	2.3	99.7	13.8	178	24.6
Tehama	294.4	30.7	207.4	21.6	26.3	2.7	120.9	12.6	310	32.3

County	Emergent									
	Nonemergent		Primary Care Treatable		Need ED Care, Preventable		Need ED Care, Not Preventable		Unclassified	
	Count	Percent-age	Count	Percent-age	Count	Percent-age	Count	Percent-age	Count	Percent-age
Tulare	416.0	38.3	204.6	18.8	19.2	1.8	112.3	10.3	334	30.8
Tuolumne	115.0	47.5	44.6	18.4	5.3	2.2	28.1	11.6	49	20.2
Ventura	57.0	28.4	30.3	15.1	3.4	1.7	12.2	6.1	98	48.8
Yolo	236.7	33.9	156.5	22.4	36.2	5.2	80.6	11.6	188	26.9
Yuba	81.0	34.8	42.0	18.0	11.3	4.9	28.7	12.3	70	30.0
Alpine, Inyo, Mariposa, and Mono	407.9	37.8	242.2	22.4	38.4	3.6	118.5	11.0	273	25.3
Del Norte, Modoc, Plumas, and Sierra	448.2	30.3	426.6	28.8	35.5	2.4	139.7	9.4	431	29.1
Colusa, Glenn, and Trinity	97.5	38.2	45.9	18.0	9.5	3.7	32.1	12.6	70	27.5
Unspecified	392.0	30.6	255.1	19.9	12.1	0.9	120.8	9.4	501	39.1

The high percentage of unclassified encounters implies that the proportion of encounters assigned to the remaining categories is likely to be understated. Nevertheless, the majority of encounters in the "other" category were classified as nonemergent (i.e., did not require care within 12 hours) or were emergent but could have been treated in an office-based setting. Across the state, these encounters comprised 58 percent of the "other" encounters (and 20 percent of total WC encounters). The counties with percentages that were more than one standard deviation above the statewide average were either rural or small urban counties: Merced, Butte, Sutter, Siskiyou, Humboldt, and the combined northwestern counties of Colusa, Glenn, and Trinity.

We compared the classification of WC encounters to encounters for a comparison group of non-WC patients ages 18-64 (excluding Medicare, Medicaid, and self-pay). The WC patients have a much higher percentage of encounters attributable to injuries than the comparison group has (67 percent versus 23 percent). Within the encounters assigned to the "other" category, the WC patients had a higher percentage of unclassified encounters (30 versus 14 percent), nearly the same percentage of encounters that were either classified as nonemergent or primary care treatable (58 percent versus 59 percent), and a lower

percentage that were classified as requiring ED care (12 percent versus 28 percent).

Most-Common Diagnosis Codes

Table D.6 lists the principal diagnosis codes reported for 1 percent or more of ED encounters in 2007. The principal diagnosis is defined as the condition problem or other reason determined to be the chief cause of the encounter for care. Consistent with the classification of the encounters by the NYU algorithm, most codes describe injuries, including wounds, contusions, and sprains and strains. V-codes are used to describe encounters with health services that do not involve disease or injury. For example, the codes included within V58, which was reported for 4.8 percent of encounters, is an aftercare visit code that covers situations in which the initial treatment of a disease or injury has been performed and the patient requires continued care during the healing or recovery phase, or for the long-term consequences of the disease (CMS and National Center for Health Statistics, 2005). A V58 code is reported for attention to surgical dressings or sutures. V67, which was reported for 2.9 percent of encounters, is used for continuing surveillance following completed treatment of a condition or injury. The code implies that the condition has been fully treated and no longer exists. Although aftercare and follow-up care might be appropriately provided in the ED, it is also care that might be provided at lower cost in an office-based setting.

Table D.6
Most-Common Principal Diagnoses for Workers' Compensation Emergency
Department Encounters, 2007

ICD-9-CM (3-digit) Diagnosis Code	Description	Percentage of Encounters
883	Open wound of finger(s)	9.3
847	Sprains and strains of the back other than lumbosacral	6.9
724	Other and unspecified disorders of the back	5.3
V58	Encounter for other and unspecified procedures and aftercare	4.8
924	Contusions of the lower limb and other unspecified sites	3.2
923	Contusions of the upper limb	3.0
959	Injuries not otherwise specified	3.0
V67	Follow-up examination	2.9
882	Open wounds of hand except fingers alone	2.9
873	Open wounds of the head and mouth	2.6
845	Sprains and strains of ankle and foot	2.6
719	Other and unspecified disorders of joint	1.9
840	Sprains and strains of shoulder and upper arm	1.8
844	Sprains and strains of knee and leg	1.8
922	Contusions of trunk	1.6
881	Open wounds of elbow, forearm, and wrist	1.6
842	Sprains and strains of wrist and hand	1.6
920	Contusion of face, scalp, and neck except eye(s)	1.5
930	Foreign body on external eye	1.4
816	Fracture of one or more phalanges of hand	1.3
V71	Observation and evaluation for suspected conditions not found	1.2
786	Symptoms involving respiratory system and other chest symptoms	1.1
338	Pain, not elsewhere classified	1.1
729	Other disorders of soft tissues	1.1
780	General symptoms	1.0
918	Superficial injury of eye and adnexa	1.0
	All other principal diagnoses	32.4
Total		100.0

Most-Common Procedures

We used the APC groupings to describe the procedures that were performed on WC patients during 160,600 ED encounters in 2007 (Table D.7). Some encounters involved multiple APCs, resulting in a total of 167,583 APCs. Only 40 percent of the encounters included an APC for an ED visit for evaluation and management services. In addition to

the procedures that are assigned to APCs, 31,340 diagnostic clinical laboratory tests were reported in connection with ED services.

Table D.7
High-Volume Workers' Compensation Ambulatory Payment Classification
Reported as Emergency Department Services, 2007

Encounter	Number^a	Percentage of Total
Total encounters	160,600	100
APC description		
Emergency visit	67,164	40.08
Drug administration	25,038	14.94
Plain film except teeth, including bone density measurement	25,013	4.93
Skin repair	19,916	11.88
Strapping and cast application	11,147	6.65
CT without contrast	4,064	2.43
Debridement and destruction	1,995	1.19
Electrocardiogram	1,959	1.17
Other APCs	11,287	6.74
Total APCs	167,583	100.00

^a Does not include 31,340 diagnostic clinical laboratory tests.

NOTE: Due to rounding, some numbers do not sum to 100.

Official Medical Fee Schedule Allowances, by Type of Service

Tables D.8 and D.9 summarize the number of encounters and the allowances, respectively, under the OMFS for hospital outpatient services for ED visits and surgical procedures in 2005-2007. The estimated total OMFS allowances decreased for the period but less than the decline in the number of encounters (11.1 percent versus 14.1 percent). One reason is annual updates for inflation in the OMFS allowances. The difference in the service mix for patients with E-codes for first-time visits for injuries and those without E-codes is striking. Most surgical procedures are performed on patients with reported E-codes. Surgical procedure allowances constitute 42.7 percent of the total allowances under the OMFS for outpatient facility fees for patients with E-codes, compared to 12.9 percent for patients without E-codes.

Table D.8
Workers' Compensation Emergency Department Encounters Under the Official
Medical Fee Schedule for Hospital Outpatient Services, 2005-2007

Encounter	2005		2006		2007	
	Number	Percent- age	Number	Percent- age	Number	Percent- age
Total	186,970	100.0	176,349	100.0	160,600	100.0
With E-codes	115,174	61.6	114,980	65.2	108,325	67.5
Without E-codes	71,796	38.4	61,369	34.8	52,275	32.6

NOTE: Due to rounding, some numbers do not sum to 100.

Table D.9
Workers' Compensation Emergency Department Allowances Under the Official
Medical Fee Schedule for Hospital Outpatient Services, 2005-2007

Allowance	2005		2006		2007	
	Amount (\$ million	Percent age	Amount (\$ million	Percent age	Amount (\$ million	Percent age
Total allowances for outpatient facility fees	18.3	100.00	18.4	100.00	16.3	100.00
ED visit allowance	11.9	65.1	12.1	65.9	10.5	64.5
Surgery allowance	6.4	34.9	6.3	34.1	5.8	35.5
Total with E-codes	12.4	100.00	13.1	100.00	12.4	100.00
ED visit allowance	6.8	54.9	7.5	57.2	7.1	57.3
Surgery allowance	5.6	45.1	5.6	42.8	5.3	42.7
Total without E-codes	5.9	100.00	5.2	100.00	3.9	100.00
ED visit allowance	5.1	86.2	4.6	87.7	3.4	87.1
Surgery allowance	0.8	13.8	0.6	12.3	0.5	12.9

The allowances for outpatient facility fees apply to about 70 percent of the services provided in EDs to WC patients. We estimated the total allowances for all services (other than professional services) at \$23.4 million in 2007 (Table D.10). In making this estimate, we separated the OMFS allowances for facility services into those services payable under the OMFS for hospital outpatient services (emergency visits and surgical procedures), the OMFS for diagnostic laboratory tests, and the OMFS for physician and nonphysician professional services (technical components only). We were unable to price about 250 low-volume procedures under the OMFS for physician and practitioner

professional services and dropped them from this analysis. The allowances do not include amounts allowed for professional services.

Table D.10
Estimated Total Official Medical Fee Schedule Allowances for Emergency Department Services Provided to Workers' Compensation Patients, 2007

Allowance	Amount (\$ millions)	Percentage
Total OMFS allowances	23.4	100.0
ED visit facility allowance	10.5	44.9
Surgery facility allowance	5.8	24.7
Diagnostic clinical laboratory allowance	4.1	17.5
Physician fee-schedule allowance for other services	3.0	12.8

NOTE: Due to rounding, some numbers do not sum to 100.

APPENDIX E

EXTERNAL MEDICAL REVIEW FOR WORKERS' COMPENSATION MEDICAL-NECESSITY DETERMINATIONS

Chapter Five discusses potential changes that might be made in the WC dispute-resolution process. In this appendix, we explore design issues in greater detail that would need to be considered in incorporating external review of medical-necessity determinations into the California WC dispute-resolution process. We draw from three models that use external review organizations in deciding medical-necessity disputes in the issues following an internal reconsideration of an adverse medical-necessity decision by the health plan or UR carrier:

- California's commercial health care service plans and health insurance (Table E.1)¹¹
- the Texas WC program (Table E.2)
- Medicare program (Table E.3).

HOW DOES INDEPENDENT MEDICAL REVIEW FIT INTO THE DISPUTE-RESOLUTION PROCESS?

Typically, the first step in the dispute-resolution process is an internal reconsideration of the UR decision. An individual who is dissatisfied with the internal reconsideration decision may request review from an IMRO by a clinician who is knowledgeable with the treatment at issue. Each program has special provisions that expedite the process for life-threatening conditions:

- For California health plans, the normal time frame for internal reconsideration is 30 days. For life-threatening conditions, the time frame for the internal reconsideration is shortened to three

¹¹ Similar IMR processes apply to medical-necessity issues arising under health plans and health insurance. The Department of Managed Health Care oversees the health plans. The Department of Insurance oversees the health insurance carriers. In addition to medical-necessity issues, the IMR process is used when the plan denies coverage because a treatment is experimental.

days. The state may also decide that extraordinary and compelling circumstances exist and waive the requirement that the enrollee first participate in the internal reconsideration process.

Reasons include, but are not limited to, serious pain; the potential loss of life, limb, or major bodily function; or the immediate and serious deterioration of the health of the enrollee. The time frame for IMR decisions involving urgent health problems that present a serious and immediate threat to health is three days.

- The Texas WC program eliminates internal reconsideration for life-threatening conditions or situations in which the worker is seeking reimbursement for out-of-pocket expenses. If the UR agent determines that an adverse UR decision involves prospective or concurrent care for a life-threatening condition, the claimant has an immediate right to an IMR review and the case is forwarded to DWC for assignment. Further, the time frame for IMR decisions involving prior authorization or concurrent review of life-threatening conditions is reduced to eight days.
- For Medicare, the internal reconsideration must be completed as expeditiously as the enrollee's health condition requires, but within 30 days for standard reviews and within 72 hours when the standard time frame places the enrollee's life, health, or ability to regain maximum function in serious jeopardy. The same time frame applies to IMR decisions. The IMRO decides whether a shortened time frame is applicable.

Under the California health-plan process, the IMR must be requested by the enrollee who has received an adverse medical-necessity determination. The Medicare program allows the physician, as well as the enrollee, to request an expedited IMR. Further, a noncontracted provider under a managed care plan may request an IMR for purposes of obtaining payment for retrospective care (in which case the physician must formally waive any right to payment from the enrollee). The Texas WC program allows either the claimant or the provider to request the IMR. Separate dispute-resolution processes apply to other medical-related issues, such as compensability and permanent disability determinations,

and to fee-schedule issues. The fee-schedule disputes are decided by DWC but only after any outstanding compensability and medical-necessity issues are resolved.

Table E.1
California Commercial Health Plans and Insurance Carrier Independent
Medical Review Process

Feature	Description
Overview of appeal process for medical-necessity determinations	Appeals of initial adverse decisions are first reviewed internally within 30 days (3 days for life-threatening conditions) by the health plan unless the treatment was denied because it is experimental or compelling reasons; an employee may file a request within 6 months with the department for an IMR of an adverse decision on the initial appeal; the health plan must comply with the IMR decision. An enrollee who decides not to participate in IMR could forfeit any statutory right to pursue legal action against the plan regarding the disputed health care service.
Standards	Single contractor: Maximus, Center for Health Dispute Resolution
Assignment	Not applicable
Documentation	The decision is to include the enrollee's medical condition, the relevant documents in the record, and the relevant findings from evidence-based literature to support the decision.
Time frames	Urgent health problems that present a serious and immediate threat to health: 3-7 days. Other health problems: 30 days after the supporting documentation is received.
Reviewers	Selected by the IMRO based on the type of medical services involved in the dispute. Generally, cases are sent to either the same specialty as the patient's treating provider or the specialty that the patient has requested that the plan provide. Reviewers must confirm they are knowledgeable of the treatment at issue, that they have treated patients with the condition at issue, and that they are credentialed or have privileges from a licensed health care facility in the diagnosis and treatment of the medical condition at issue.
Examinations	Paper review only
Decisions	Each review analysis is to cite the enrollee's medical condition, the relevant documents in the record, and the relevant findings based on the specific medical needs of the enrollee and any of the following: peer-reviewed scientific and medical evidence regarding the effectiveness of the disputed service; nationally recognized professional standards; expert opinion; generally accepted standards of medical practice; or treatments that are likely to benefit a patient for conditions for which other treatments are not clinically efficacious. The state agency adopts the analysis and issues the decision.
Fees	No fee is charged enrollee; insurance company pays for cost
Monitoring	IMR decisions are posted
NOTE: TDI = Texas Department of Insurance. DO = doctor of osteopathy. URAC = Utilization Review Accreditation Commission.	

Table E.2
Texas Workers' Compensation Independent Medical Review Process

Feature	Description
Overview of appeal process for medical-necessity determinations	Appeals of initial adverse decisions are first reviewed internally within 30 days by the carrier or the carrier's UR agent unless there is a life-threatening condition or the worker is seeking out-of-pocket reimbursement for nonnetwork care; the injured worker or provider may request within 45 days that an adverse reconsideration be reviewed by an IMRO; the carrier must comply with the IMRO decision, but either party may request an administrative hearing (for nonnetwork) or judicial review (network care).
Standards	IMROs certified by TDI for both health plans and WC. Standards are designed to ensure timely review, confidentiality of medical records, qualifications and independence of reviewers, and fairness of procedures.
Assignment	TDI assigns cases randomly to the IMRO; the IMRO must certify that there is no conflict of interest for IMRO or reviewer; the reviewer may not be in the same network as the provider.
Documentation	The carrier or UR submits within 3 days to IMRO; the provider or patient may submit additional information. The IMRO may request additional documentation (carrier pays the copy costs if the provider is not a party to the dispute) or a designated doctor examination; the department has authority to take enforcement actions to obtain documentation.
Time frames	Life-threatening preauthorization or concurrent: 8 days; other preauthorization or concurrent: 20 days; retrospective: 30 days from fee receipt
Reviewers	Selected by the IMRO; physicians must be licensed to practice in the state; typically manage the condition, procedure, or treatment under consideration for review; and be qualified to provide the health care reasonably required for the condition.
Examinations	The IMRO may request a designated doctor exam within 10 days of receipt of case; exam must occur within 21 days and report filed within 7 days of exam; the time frame for the decision starts when the exam report is received. No communication other than on medical-necessity issues is allowed.
Decisions	The decisions must include a list of medical documentation reviewed, description and source of screening criteria and clinical basis for the decision, explanation of findings and conclusions, qualifications of the reviewers, and the basis for any divergence from DWC or network guidelines or policies. A UR report overturned by the IMRO cannot be used for subsequent medical-necessity denials of the same health care services.
Fees	MD or DO review: \$650; other: \$460 Network: carrier pays; nonnetwork: carrier pays preauthorization and concurrent cases; retrospective reviews: requestor initially pays and nonprevailing party (carrier or provider) ultimately pays. WC patient cannot be charged (carrier pays initial fee if employee is requestor).
Monitoring	WC division monitors IMRO decisions and posts results quarterly

Table E.3
Medicare Managed Care Independent Medical Review Process

Feature	Description
Overview of appeal process for medical-necessity determinations	Appeals of initial adverse decisions are first reconsidered internally by the Medicare managed care plan. If the reconsideration upholds the original decision in whole or in part, the plan automatically forwards the decision for review by the independent review entity. IMR must be completed as expeditiously as the enrollee's health condition requires, but within 30 days for standard reviews and within 72 hours when the standard time frame places the enrollee's life, health, or ability to regain maximum function in serious jeopardy. An enrollee, his or her representative, or a provider with an appealable interest who is dissatisfied with the IMR decision may file an appeal for an administrative law hearing if the amount in controversy is at least \$120. A representative of the health plan may attend the hearing and present evidence, but the plan cannot appeal an IMR decision. At the next level in the process, either the enrollee (or representative) or health plan may appeal for review by the Medicare Appeals Council (which may decline to review the case). Either party may request federal judicial review if the amount in controversy is at least \$1,220.
Standards	Single contractor: MAXIMUS Federal Services
Assignment	Not applicable
Documentation	The health plan forwards to the IMRO and must include a "peer-defensible" rationale for the denial and relevant medical records. The employee has 10 days to submit additional information in writing that the IMRO does not disclose to the health plan. The IMRO may request that the health plan supply additional information to remedy a question or deficiency in the case file. The time frames for response are expedited hearing (3 calendar days), standard (5 working days), and payment only (10 working days).
Time frames	As expeditiously as required by the enrollees condition but within the following time frames: Life-threatening preauthorization or concurrent: 72 hours; other: 30 days; payment only (noncontracting physician or provider): 60 days
Reviewers	Selected by the IMRO. Physicians meet URAC standards, are assigned based on the case clinical issues, and are typically in the same specialty as the physician furnishing the contested service.
Examinations	Designed to be de novo "paper" review only. Any discussion is limited to review of the IMRO process, including instructions for submission of written documentation.
Decisions	Must include the specific reasons for the decision and the enrollee's appeal rights
Fees	Contract with Medicare program
Monitoring	Posts quarterly plan-specific information on appeals but not individual decisions

Each program requires that the payer implement the IMR decision so that any subsequent appeal by the payer does not postpone implementation of a favorable review decision for the enrollee. However, either party who is dissatisfied with the IMR decision may request review under the California health-plan process (judicial review) and the Texas WC program (judicial review for network care and an administrative hearing for nonnetwork care). The Medicare appeal process continues with an administrative review process before ending with judicial review. Only the enrollee (or representative) or a provider with an appealable interest (but not the health plan) may appeal an IMR decision to an administrative law judge. Either the enrollee or the health plan may appeal at the last two steps—review by the Medicare Appeals Council and federal district court review.

Typically, the dispute-resolution process allows for appeal of an IMR decision. The benefits of having medical experts resolve medical-necessity issues should not be lost at subsequent stages of the appeal process. This will require a balance between due-process considerations and discouraging requests for administrative or judicial review of IMR decisions. Strategies that might be considered include the following:

- Establish a high “bar” for overruling the IMR physician’s assessment of medical necessity, such as demonstrating the current requirement that a preponderance of scientific evidence is at variance with the criteria relied upon by the IMR physician.
- Establish a minimum threshold dollar amount in dispute for appeals.
- Limit the basis of appeal to procedural issues and errors.
- Require the losing party to pay for the cost of the hearing.

WHAT STANDARDS SHOULD Be USED TO CERTIFY INDEPENDENT MEDICAL REVIEW ORGANIZATIONS?

Each of the three reviewed programs has established standards that IMROs must meet. Unlike programs in some other states, none deems that an IMRO that is accredited by an external accrediting organization, such as URAC, meets its standards.

The California health-plan and Medicare programs award IMRO contracts through a competitive process, and both programs currently use a single IMRO (MAXIMUS) to process all requests for IMRs. The California Health and Safety Code requires that the IMRO have no relationships that would present potential conflict-of-interest issues. For example, the IMRO may not be owned or controlled by a payer or an association of payers. Further, the IMRO must have processes in place that ensure that the physician reviewers are properly credentialed and free of conflicts of interest, protect the confidentiality of medical records, and perform credible, impartial reviews timely and monitor them for quality.

TDI has also established standards designed to ensure the integrity of the IMR process. IMROs apply annually for participation in the Texas IMR. The Texas WC program uses multiple IMROs. The current list includes 40 approved IMRO contractors that are randomly assigned to review cases. DWC staff indicate that the multiple IMRO contractors make it easier to avoid conflict-of-interest issues.

Considerations for California's Workers' Compensation Program

It would be administratively burdensome for DWC to establish its own standards for IMROs and develop a certification process. DWC could reduce the burden by taking advantage of existing processes. First, it could adopt the standards used for the California HP program with any modifications necessary for WC-specific issues. Second, it could deem that some or all standards are met if an organization is accredited by an external accrediting organization whose standards meet or exceed the state's standards. Currently, there are seven URAC-accredited IMROs in California.

An issue that would need to be addressed is whether there should be a single or multiple IMROs. A single IMRO would reduce the administrative burden on DWC, particularly if the IMRO were the same as the contractor for the California health plans and were not selected through a separate competitive process. Using a single IMRO would also increase the likelihood that review decisions would be consistent with DWC guidelines and across cases. The particular IMRO that is used by both California health plans and Medicare managed care (MAXIMUS) contracts only with government programs so that there are no conflict-

of-interest issues between the IMRO and payers.¹² Also, challenge of finding an impartial qualified physician reviewer is less problematic for these programs because they do not mandate that the physician be licensed to practice in the state in which the disputed care is provided.¹³ The design of the Texas IMR process—which requires that the physician reviewer be licensed in Texas and not be a member of the same network—may not be feasible with a single IMRO. The administrative burden on the Texas WC program is reduced by using IMROs certified by TDI for commercial health plans, but administrative oversight and monitoring of multiple IMROs is likely to demand more resources than a single-IMRO process.

HOW WOULD THE INDEPENDENT MEDICAL REVIEW PROCESS WORK?

Flow of Cases and Documents to the Independent Medical Review Organization

A single IMRO eliminates the need to decide which IMRO should be assigned the case, but a case still needs to be screened to confirm that the case qualifies for IMR (i.e., the request is filed in a timely manner by an eligible party and involves a medical-necessity issue) and, if necessary, expedited review.

- The California health-plan process requires the enrollee to file the request for IMR with the state (Department of Managed Health Care or Department of Insurance, as applicable). The state reviews the case to confirm that it qualifies for IMR and decides whether an expedited review is required before sending it to the IMRO. The IMRO notifies the health plan to submit case documentation.

¹² MAXIMUS is accredited by URAC. The Medicare fee-for-service program uses MAXIMUS for IMRs of institutional providers and First Coast Services Options for reviews of physician and other practitioner services in California. The latter IMRO is also a Medicare claim processor for Florida and Puerto Rico.

¹³ Initially, the California IMR process had two backup IMROs to handle cases that were declined by the prime contractor. However, cases were not referred to these contractors, and only a single contractor is now used.

- The Medicare process does not require that the enrollee request the IMR. Adverse reconsiderations are automatically referred to the IMRO by the health plan together with the case documentation. The IMRO decides whether the case involves a medical-necessity issue (which requires physician review) and whether an expedited hearing is warranted. The IMRO notifies the enrollee to submit any additional documentation.

If there are multiple IMROs, the impartiality of the IMR process is best preserved when an entity that is not a party to the dispute assigns the case to the IMRO. For example, the Texas DWC randomly assigns cases to an IMRO after determining that the issues qualify for IMR. The IMRO notifies the payer to submit case documentation.

Review Process

In each IMR process, the IMRO is responsible for selecting the clinician who is to conduct the IMR of the medical-necessity issues. Each IMRO contracts with a panel of physicians in various specialties so that the case can be assigned to a physician who is knowledgeable about the treatment at issue and does not have a conflict of interest. The Texas WC program requires that the physician be licensed to practice in the state (a deviation from the Texas rules for commercial plans). The California health plans require that the physician be U.S. licensed and board-certified. The IMRO is required to give preference to a California-licensed physician "except when training and experience with the issue under review reasonably requires the use of an out-of-state reviewer."

Under each program, the identity of the physician reviewer is confidential. The California health plan requires that the decision include the reviewer's qualifications. In the Texas WC program, the review decision must certify that neither the IMRO nor physician has a conflict of interest and include the qualifications of the reviewing physician. The Medicare programs rely on Medicare's IMRO certification standards and contract provisions to ensure that the review is performed by an impartial and qualified reviewer.

The California health plans and Medicare programs provide for a de novo paper review of the medical-necessity issue. Any communication with the parties in the dispute is limited to discussion of process and documentation requirements. No communication on the merits of the issue is allowed. The Texas WC IMR process allows the reviewing physician to request, if needed, additional documentation or an examination by a designated doctor (selected by the Texas DWC from a list of QMEs). Communication in this situation is restricted to the medical-necessity issue.

The review processes generally do not prescribe specific standards or guidelines that are to be used in evaluating medical necessity. For example, California Health and Safety Code Section 1374.33(b) provides that the IMR analysis be based on the specific medical needs of the enrollee and any of the following:

- peer-reviewed scientific and medical evidence regarding the effectiveness of the disputed service
- nationally recognized professional standards
- expert opinion
- generally accepted standards of medical practice
- treatments that are likely to provide a benefit to a patient for conditions for which other treatments are not clinically efficacious.

The Texas WC rules require that the decision explain any deviation from DWC's policies or guidelines or a network's treatment guidelines. Medicare's IMR process requires that the IMRO provide the physician reviewer with pertinent Medicare coverage policies and any permissible and medically appropriate managed care plan policies. Further, the IMRO appeals officer or medical director reviews the physician's decision to ensure that it is consistent with any relevant policies.

In the California health-plan process, the IMRO provides its analysis and findings to the state agency. The director adopts the analysis and issues the actual decision. In contrast, the review decisions are issued by the IMRO in the Texas WC and Medicare programs.

After removal of any identifying physician and patient information, the IMR decisions are made available to the public in the California

health plan and Texas WC processes (including the identity of the IMRO). Medicare publishes a summary of appeal volume, issues, and disposition.

Time Frames

The time frames for the various steps in the appeal process are shown in Table E.4. As previously discussed, each process makes provision for an expedited review. In addition, the Texas WC and Medicare programs require shorter review time frames for medical-necessity issues involving prior-authorization or concurrent-care denials than retrospective denials of care. The California health-plan program allows the state to grant extensions for filing an IMR request for good cause. Each program provides the oversight agency with tools to enforce the timelines for submission of documentation.

Table E.4
Time Frames for Steps in the Independent Medical Review Process

Action	California health plans	Texas WC	Medicare Managed Care
Request for IMR review after internal reconsideration of UR decision	File with state within 6 months	File with payer within 45 calendar days of receipt of denial; payer notifies DWC within 1 working day	Automatically requested by plan. Must be received by IMRO Expedited: 24 hours Standard: 5 calendar days
Furnish documentation	Expedited: within 24 hours of receipt of IMR notice Standard: within 3 working days of receipt of IMR notice	Within 3 working days after date of receipt of notice of IMRO assignment	From date of IMRO's request for additional documentation to submission: Expedited: 3 calendar days Prior/concurrent: 5 working days Retrospective: 10 working days Enrollee given 10 days from IMR notice to submit additional documentation
Physical examination	Not applicable	IMRO request within 10 days of receiving notice of IMRO assignment; Payer provides medical records at least 3 days before exam; Physician performs exam within 21 days and provides results within 7 days	Not applicable
Issue IMR decision	IMRO furnishes written analysis Expedited: within 3 days Standard: 30 days State immediately adopts and issues decision	Life threatening: within 8 days of receipt of case Prior or concurrent care: within 20 days of receipt of case Retrospective: within 30 days after receipt of payment If doctor exam	Expedited: within 72 hours of receipt Prior/concurrent care: within 30 calendar days of request receipt IMRO may grant an extension of up to 14 days if delay is in enrollee's best interest

Action	California health plans	Texas WC	Medicare Managed Care
Effectuate IMR decision that care is medically necessary	Authorize or pay for services within 5 days	requested, timeline starts after results received. Retrospective: pay within 21 days	Expedited: Within 72 hours Prior/concurrent care: Authorize within 72 hours or provide within 14 days Retrospective: pay within 30 days

Considerations for California's Workers' Compensation Program

Designing an IMR process for California's WC program requires balancing administrative efficiency with due-process considerations. The administrative burden on DWC can be minimized by using the same contractor with standards and processes that are similar to the those of the California health plans. Issues that would need to be addressed in doing so include the following:

- Is the requirement that the IMRO give preference to a California-licensed physician "except when training and experience with the issue under review reasonably requires the use of an out-of-state reviewer" appropriate? Is the pool of California-licensed physicians within specialties common in WC large enough to minimize the professional conflicts of interest that could arise in a smaller community of, say, spinal surgeons?
- Is a "paper review" sufficient or should provision be made for examinations? The current California WC IMR process for MPN care requires personal examination by the physician reviewer. The approach taken in Texas WC, in which the reviewer may request, as needed, an examination by a QME appointed by DWC, is an attractive alternative. It keeps the IMRO activity to a "paper review" but also provides a mechanism to obtain additional information when the medical record is insufficient for the reviewer to make a medical-necessity decision.

- What functions should DWC perform in the IMR process? The California health-plan and Texas WC models provide that the oversight agency screen the IMR requests. The California health-plan screening includes a clinical review to determine whether an expedited review is required and to identify all the issues that need to be addressed. In the Texas WC program, the UR agent screens cases to determine whether expedited review is needed. The IMRO performs this function for the Medicare program. Most likely, a high proportion of adverse UR reconsiderations will be appealed, so the Medicare model of automatic referral of adverse decisions from the payer to the IMRO for prior authorization and concurrent care together with supporting case documentation should also be considered. Comparing the experience of MAXIMUS in processing California health-plan and Medicare IMR requests would be informative in this regard. If physical exams are provided as needed, DWC would need to arrange for them. Under the California health-plan model, the state agency (rather than the IMRO) issues the decision in order to facilitate enforcement. A streamlined approach would be for the IMRO to issue the decision and DWC to monitor the timeliness and quality of the decisions and payer compliance.
- What criteria should be used by the physician reviewer? The reviewers should use the presumption of correct medical treatment defined in the Labor Code and implementing regulations (instead of the criteria provided in the Health and Safety Code). One advantage of using a single IMRO is that the contractor can become familiar with WC common medical issues and ensure that reviewers are thoroughly familiar with medical-treatment guidelines and other relevant California standards.
- Should the IMR decision be binding pending appeal or should it be stayed until the dispute-resolution process is completed? Each process requires that the payer implement the IMR decision pending appeal. This approach avoids further delays in furnishing medically appropriate care. However, equitable financial liability policies would need to be developed for the scenario in which care (that had been denied during prior or concurrent UR)

is provided based on an IMR decision that is subsequently reversed during the administrative appeal process.

HOW SHOULD INDEPENDENT MEDICAL REVIEW BE FINANCED?

The different approaches used by the programs to finance the cost of the IMR review process have implications for the incentives for the quality of the UR process and the use of the dispute-resolution process.

- Under the California health-plan process, the health plans pay a per-case rate for each IMR review. This provides an incentive to ensure that UR decisions are carefully made, documented, and explained.
- Under the Texas WC program, the payer pays for the cost of appeals involving network care and prior or concurrent authorization of nonnetwork care. For retrospective nonnetwork care, the losing party in the dispute (payer or provider) must pay for the cost of the IMR review. The worker cannot be charged. The policy discourages reviews of retrospective nonnetwork denials in which the amount in controversy is relatively low or the IMR decision is likely to uphold the payer.
- Medicare contracts with the IMRO directly but also provides for automatic IMR review of adverse UR reconsiderations. Although there are no direct financial incentives, knowing that the UR decision will be reviewed by medical experts is likely to improve the quality of the decision.

Considerations for the Workers' Compensation Program

The approach taken under the Texas WC program has a rationale that might be appropriate for California's WC program. Under the rules for MPNs, providers are to agree to provide care consistent with the medical-treatment guidelines issued by the AD of DWC. Arguably, disagreements over medical-necessity issues involving network providers are contractual issues, and the cost of resolving them should be assumed by the payer. For nonnetwork care, the IMR is replacing other dispute-resolution processes that would be paid for by the payer. Having the payer pay for the cost of prior authorization or concurrent care nonnetwork IMR reviews creates an incentive to improve the quality of UR

decisions and ensures that the claimant receives an independent review of whether care is medically necessary.