

INJURY UPDATE

*A Report to Oklahoma Injury Surveillance Participants**

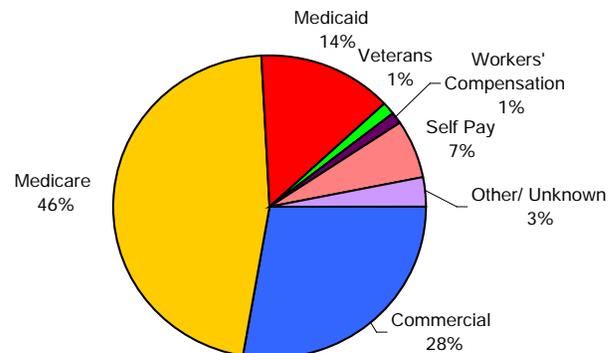
June 15, 2007

Hospitalizations Paid by Workers' Compensation, Oklahoma, 2005

Work-related illnesses and injuries are a significant public health problem in Oklahoma. In 2005, an estimated 47,300 Oklahoma workers experienced a nonfatal occupational illness or injury and another 100 died as the result of a traumatic work-related injury. These adverse occupational events translate into a wide array of physical, mental, and economic sequelae that affect the employee, employer, and their families, in addition to larger infrastructures, such as the health care and workers' compensation systems. This report characterizes all acute care hospitalizations paid primarily by workers' compensation using Oklahoma's 2005 inpatient hospital discharge database. The database includes Oklahoma residents in licensed, non-federal, in-state hospitals with readmissions and transfers included. Although patients may have more than one payer, the primary payer generally covers the largest proportion of the hospital costs. A coordination of benefits determines what payer has primary responsibility; in most instances, workers' compensation, if applicable, takes priority.

In 2005, Oklahoma hospitals reported 426,803 discharges of Oklahoma residents 15 years of age and older from short-term acute care facilities. Of those discharges, 4,418 (1%) were paid primarily by workers' compensation (Figure 1). Medicare comprised the largest proportion with slightly under half of the total number of discharges (46%). It is important to note that hospitalizations covered by workers' compensation are not a complete picture of all hospitalizations for work-related illness or injury; it is generally agreed that an undetermined amount of underreporting occurs. This underreporting is the result of several factors. For various reasons, an individual may decide not to file a workers' compensation claim or the claim may be denied, contested, or not required to pay on a particular medical condition. Many workers, particularly self-employed individuals, such as farmers and independent contractors, may not be covered by workers' compensation or may choose to file under a commercial payer. There is also an unknown degree of misclassification as some workers' compensation payers may be incorrectly categorized as commercial insurance or self pay. The work-relatedness of the condition may also be difficult to determine and may not be correctly attributed to an occupational origin. Nevertheless, hospitalizations paid by workers' compensation are an indication of the major types of occupational illness and injury being treated in Oklahoma hospitals. Therefore, one can assume that the true magnitude of the problem is at least as large as what is observed and may likely be even more significant. The remainder of this report will focus on characterizing the 4,418 workers' compensation-paid discharges.

Figure 1. Short-Term Acute Care Hospitalizations by Payer Classification, Oklahoma Residents 15 Years of Age and Older, 2005



*The INJURY UPDATE is a report produced by the Injury Prevention Service, Oklahoma State Department of Health. Other issues of the INJURY UPDATE may be obtained from the Injury Prevention Service, Oklahoma State Department of Health, 1000 N.E. 10th Street, Oklahoma City, Oklahoma 73117-1299, 405/271-3430 or 1-800-522-0204 (in Oklahoma). INJURY UPDATES and other IPS information are also available at <http://ips.health.ok.gov>.

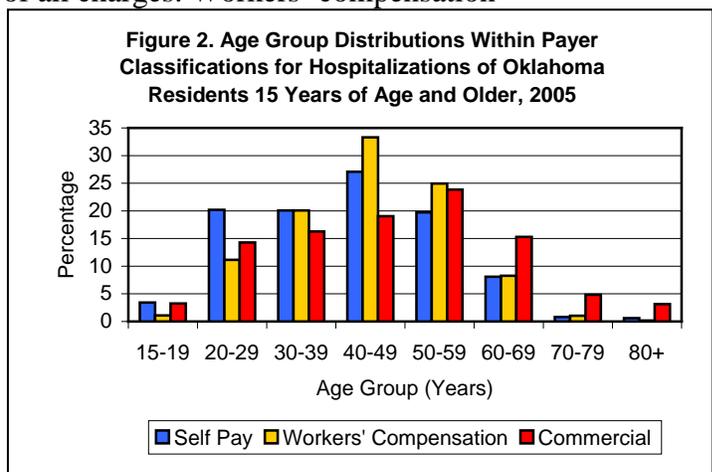
Of the 4,418 workers' compensation-paid discharges in calendar year 2005, the average length of stay was 3.5 days (median=2 days). Stays ranged from 1 day to 176 days in length. For all other discharges combined (i.e., those with any other primary payer than workers' compensation), the average length of stay was approximately one day longer (mean=4.6 days; median=3 days). Table 1 shows the average length of stay by primary payer; discharges paid by workers' compensation had the shortest length of stay of all payer classifications.

Table 1. Length of Stay for Hospitalizations of Oklahoma Residents 15 Years of Age and Older by Payer Classification, 2005

Payer	Number of Discharges (Percent of Total)	Mean (Days)	Median (Days)	Range (Days)
Commercial	118,257 (28%)	3.69	2.0	1-283
Medicare	197,949 (46%)	5.47	4.0	1-267
Medicaid	59,769 (14%)	4.28	2.0	1-365
Veterans affairs/military	6,101 (1%)	3.58	2.0	1-168
Workers' compensation	4,418 (1%)	3.49	2.0	1-176
Uninsured/self pay	27,718 (6%)	3.68	2.0	1-109
Other	12,571 (3%)	4.39	3.0	1-135
Unknown	20 (<1%)	3.65	3.0	1-10

The distribution across age groups was significantly different between workers' compensation hospitalizations and all others combined. Workers' compensation patients were more likely to be younger than patients with other primary payers; one-third of the discharges were among patients in the 40-49 year age group, while 35% of non-workers' compensation hospitalizations were among individuals 70 years of age and older. By their very nature, some payers are designed principally to cover certain age groups (e.g., Medicaid for younger populations and Medicare for older populations). Age distributions within the workers' compensation and the uninsured/self pay classifications were the most similar (Figure 2). Of those whose hospitalization was paid by workers' compensation, nearly 60% were between 40 and 59 years of age. Patients covered by workers' compensation were about four times more likely to be male than those without such coverage; females accounted for 30% of all workers' compensation discharges.

The total charges associated with all short-term acute care hospitalizations of Oklahoma residents 15 years of age and older in 2005 were \$8,175,902,374. Total charges represent the amount that the hospital billed for services and not necessarily the actual cost of services or the revenue collected in payments. For this report, total charges were attributed solely to the primary payer, even though a secondary or tertiary payer may have been responsible for a proportion. It is unknown how many discharges had more than one payer. Charges to workers' compensation totaled \$125,685,073, or 1.5% of all charges. Workers' compensation hospitalizations had the highest average total charges per stay of all payer classifications (\$28,448). Medicare had the second highest average total charges (\$21,274), followed by veterans affairs/military (\$20,228), commercial (\$18,750), uninsured/self pay (\$16,575), and Medicaid (\$14,105). Workers' compensation hospitalizations also had the highest average charges per day (\$11,609), followed by veterans affairs/military (\$7,340), commercial (\$6,741), Medicare (\$5,592), uninsured/self pay (\$5,344), and Medicaid (\$3,965).



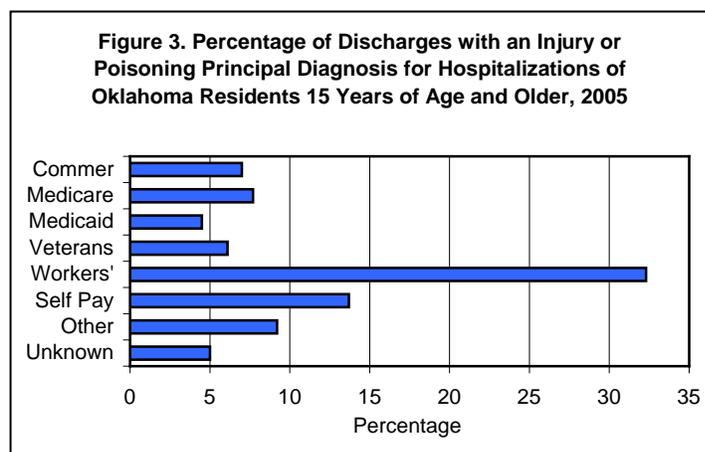
Of the 4,418 discharges paid by workers' compensation, the top three principal diagnoses were all intervertebral disc disorders [*International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM) code 722]. The single most frequent principal diagnosis was ICD-9-CM 722.10, displacement of lumbar intervertebral disc (the "shock absorber" between vertebrae in the lower back) without myelopathy (disease or disorder of the spinal cord or bone marrow). Sixteen percent of all workers' compensation-paid discharges had this type of intervertebral disc disorder as the primary diagnosis. Among all hospitalizations with this principal diagnosis, those paid by workers' compensation had the highest average total charges, over \$10,000 more than the second highest (veterans affairs/military), yet the length of stay was comparable to others (Table 2). The second most frequent principal diagnosis was ICD-9-CM 722.52, degeneration of lumbar intervertebral disc (about 7% of all workers' compensation hospitalizations). Again, hospitalizations paid by workers' compensation accrued the largest average total charges (\$54,931); although, the average was just over \$1,300 more than the average for commercial claims. Finally, the third most frequent principal diagnosis was ICD-9-CM 722.0, displacement of cervical (neck) intervertebral disc without myelopathy. For this category, workers' compensation stays had the lowest average total charges and the lowest average length of stay. Dorsopathies, disorders of the back (ICD-9-CM 720-724), accounted for 40% of the principal diagnoses for workers' compensation hospitalizations. For all other payer classifications, dorsopathies comprised 6% or less of the total discharges.

Approximately one-third of workers' compensation hospitalizations had a primary diagnosis of an injury or poisoning (ICD-9-CM 800-999), which was the second largest group of principal diagnoses after dorsopathies. Injuries and poisonings comprised much smaller proportions of the total discharges for all other payer classifications (Figure 3).

Table 2. Comparison of the Top Three Workers' Compensation-Paid Principal Diagnoses by Payer Classification for Hospitalizations of Oklahoma Residents 15 Years of Age and Older, 2005

ICD-9-CM Code	Payer	Percent of Payer's Total Discharges	Average Total Charges	Average Length of Stay (Days)	Percent Male
722.10 (displacement of lumbar intervertebral disc without myelopathy)	Commercial	1.2%	\$24,788.38	2.1	53%
	Medicare	0.3%	\$23,049.75	2.9	42%
	Medicaid	0.2%	\$24,043.70	2.5	31%
	Veterans affairs/military	1.9%	\$25,919.39	2.0	61%
	Workers' compensation	15.7%	\$36,292.98	2.3	72%
	Uninsured/self pay	0.3%	\$17,343.55	2.3	56%
	Other	0.4%	\$25,531.80	2.3	50%
722.52 (degeneration of lumbar intervertebral disc)	Commercial	0.4%	\$53,604.84	3.2	39%
	Medicare	0.2%	\$32,228.05	4.1	31%
	Medicaid	0.1%	\$44,947.74	3.5	29%
	Veterans affairs/military	0.6%	\$49,339.06	2.9	54%
	Workers' compensation	6.5%	\$54,930.55	3.1	62%
	Uninsured/self pay	0.2%	\$27,979.76	3.6	39%
	Other	0.2%	\$50,384.83	3.5	43%
722.0 (displacement of cervical intervertebral disc without myelopathy)	Commercial	0.7%	\$21,591.12	1.2	44%
	Medicare	0.1%	\$24,007.34	1.8	45%
	Medicaid	0.04%	\$34,848.69	2.2	31%
	Veterans affairs/military	1.0%	\$25,236.41	1.5	55%
	Workers' compensation	6.3%	\$20,545.48	1.2	52%
	Uninsured/self pay	0.1%	\$20,874.97	1.5	38%
	Other	0.1%	\$24,332.94	1.9	47%

The average total charges between payer classifications for injury and poisoning-related discharges were generally comparable to one another. Workers' compensation-paid injury and poisoning discharges averaged \$25,093 in total charges, just over \$200 below the overall average for all injury and poisoning discharges (\$25,311). However, for all other diagnoses (i.e., anything not related to an injury or poisoning), there was a significant disparity between the average total charges for workers' compensation hospitalizations (\$30,052) and the overall average (\$18,640). In both instances (i.e., injury and non-injury diagnoses), workers' compensation discharges averaged over a one-day shorter stay (Table 3). Of the injury and poisoning-related diagnoses for workers' compensation discharges, one-third were fractures. Fractures of the lower limb were most prevalent, followed by upper limb fractures, and fractures of the neck and trunk.



Hospitalizations paid by workers' compensation were also more likely to involve one or more procedures. Only 17% of the 4,418 workers' compensation discharges did not have at least one procedure coded to the stay, compared with 46% of discharges paid by other means. Fourteen percent of workers' compensation hospitalizations had seven or more procedures (compared to 2% for non-workers' compensation).

Table 3. Comparison between Injury and Poisoning-Related Discharges and All Others by Payer Classification for Hospitalizations of Oklahoma Residents 15 Years of Age and Older, 2005

Payer	Injury or Poisoning Principal Diagnosis		Other Principal Diagnosis	
	Average Total Charges	Average Length of Stay (Days)	Average Total Charges	Average Length of Stay (Days)
Commercial	\$25,141.36	4.5	\$18,266.61	3.6
Medicare	\$24,647.26	5.4	\$20,992.38	5.5
Medicaid	\$32,100.15	6.1	\$13,254.00	4.2
Veterans affairs/military	\$30,816.63	5.2	\$19,544.00	3.5
Workers' compensation	\$25,093.41	3.6	\$30,052.39	3.4
Uninsured/self pay	\$23,116.15	3.9	\$15,533.37	3.6
Other	\$25,163.02	4.4	\$14,581.84	4.4
Unknown	\$21,277.00	4.0	\$20,173.11	3.6

Hospital discharge data are limited by the amount of information they can provide for prevention efforts; for instance, the patient's employer and occupation are not recorded, so high-risk industries cannot be identified with this source. However, it is apparent that musculoskeletal disorders, particularly those related to the back and neck, are responsible for a large proportion of hospitalizations paid by workers' compensation, as are traumatic injuries, such as fractures. There is an abundance of research on musculoskeletal disorders and other occupational illnesses and injuries, including ways to prevent them. The most effective way to reduce the number of hospitalizations and the costs associated with these conditions is through primary prevention efforts, such as ergonomic design, effective worker training, personal protective equipment, and appropriate job practices. Hospitalizations paid by workers' compensation have the highest average total charges and are more likely to involve more procedures than other payers. Efforts need to be directed to improve workplace designs and practices. For more information on occupational health indicators and work-related fatalities in Oklahoma, please visit <http://www.health.state.ok.us/program/injury/index.html>.