A REPORT TO THE INDUSTRY

The Utilization and Cost of Drug Testing in the California Workers' Compensation System

By Stacy L. Jones, M.A.

California Workers' Compensation Institute

OCTOBER 2015

California Workers' Compensation Institute

1333 Broadway, Suite 510, Oakland, CA 94612 | 510-251-9470 | www.cwci.org

EXECUTIVE SUMMARY

High rates of inappropriate opioid use, physician drug dispensing and the increased utilization and cost of pharmaceuticals in the California workers' compensation system have been well documented by public policy research. These issues are now associated with another emerging cost driver -- drug testing.

Prior Institute research on the topic, published in May 2012, documented the viral-like growth in the volume of drug testing in the system that began a decade ago. That study analyzed a sample of 450,873 drug tests from calendar years 2004 through 2011 that had been identified as having one of 27 specific procedure codes that claims administrators used to reimburse drug testing service visits. The distribution of those visits by date of service underscored the rapid escalation in the use of drug testing in California workers' compensation, showing that the number of drug tests within that study sample had climbed from 4,012 in 2004 to 186,023 in 2011 – a 4,537 percent increase in the span of just 8 years. As a result of that growth, total annual payments for drug testing within the sample jumped from $142,481 in 2004 to $27.4 million in 2011.

This study builds on that initial research, using more recent and detailed data to provide an updated look at the volume, frequency and type of drug tests used in California workers' compensation, as well as the associated payments. For this analysis, the author employed a database of 2.8 million clinical lab service records for urine drug tests (UDTs) involving California injured workers. Service dates for these tests ranged between 2002 and 2014, with reimbursements for these services totaling $108 million. Key findings include:

- Over the past eight years urine drug tests have grown from 10.2 percent to 59.1 percent of all California workers' compensation laboratory services, while UDT reimbursements have increased from 23.1 percent to 77 percent of all laboratory payments in the system (Exhibit 1).
- Utilization of quantitative drug tests between 2007 and 2014 increased by 2,431 percent. Quantification of opiates remains the leading test by volume, followed by quantification of substances (PCP/Cocaine/Ethanol) that would be illicit or problematic in conjunction with the use of prescribed medications.

- Between accident years (AY) 2003 and 2012, the average number of drug testing service dates for injured workers who received these services increased by 9 percent at 12 months post injury; 35 percent at 24 months post injury; and 350 percent at 36 months post injury.
- Among the injured workers who were drug tested, the average number of tests per employee per date of service more than tripled from 4.5 in 2007 to 14.9 in 2014, driving the average amount paid per date of service up from $96 in 2007 to $307 in 2014 – a 220 percent increase.
- The data suggests that the percentage of injured employees tested who receive Schedule II[1] or Schedule III[2] drugs may be more related to claim litigation status than the class of dispensed drug. Historically, the percentage of injured workers who have been drug tested has been less than 20 percent.
- There is evidence of a migration to physician in-office/non-laboratory drug testing. The top ten providers (or labs) that conducted drug tests in 2007 accounted for 81 percent of all payments for UDT services that year, while in 2014, the top 10 drug testing providers accounted for 46 percent of the UDT reimbursements. Further analysis shows that in 2008, 74 percent of UDT services were provided by just four laboratories, but during the ensuing four years the mix of providers shifted, with the big laboratories accounting for a declining share of the market while the number of non-laboratory providers billing for these services increased. Between 2008 and the end of 2014, the total number of UDT providers receiving workers' compensation reimbursements more than doubled from 428 to 876.
- Absent an accepted empirical, evidence-based protocol on the appropriate level and scope of testing, it is difficult to reconcile the noted increases in the volume and variety of drug testing with clinical appropriateness and favorable outcomes for the injured worker.

---

1. Schedule II substances have a high potential for abuse which may lead to severe psychological or physical dependence.
2. Schedule III substances have less potential for abuse than Schedule II substances. Abuse may lead to moderate of low physical dependence or high psychological dependence.

BACKGROUND

The use of opioids to treat acute and chronic pain has been the subject of much discussion and research within the context of workers' compensation and in medical practice in general. The costs associated with opioid prescriptions have been well documented, and recent Institute research has shown that despite efforts to curb the utilization and cost of these drugs in California workers' compensation, their use has continued at near record levels.[3]

While the direct costs associated with the opioid epidemic[4] have been documented, it has been more difficult to identify and document the indirect costs associated with these scheduled medications. Urine drug testing (UDT) services are a prime example of such indirect costs, as the use of these services has risen dramatically over the past decade, initially increasing as opioids became more prevalent in workers' compensation, then continuing to rise even as the growth in opioid dispensing plateaued between 2008 and 2012.

As the medical community, insurers, regulators, the media and the public have become increasingly aware of the opioid epidemic, there has been growing concern about the long-term repercussions associated with these drugs, including the risks of addiction and overdose. This has led to stepped up efforts to more closely monitor the distribution and use of opioids to treat chronic pain. As part of that effort, urine drug tests have been added to published medical treatment guidelines as a component of pain management programs. Recent examples include:

- The American College of Occupational and Environmental Medicine (ACOEM, 2011) recommended baseline testing, followed by random testing at least twice and up to 4 times per year, for patients on chronic opioid therapy (COT).
- The American Pain Society (APS) and the American Academy of Pain Medicine (AAPM) (Webster, 2012) recommended random (as opposed to scheduled) testing of chronic pain patients receiving opioids.
- Gourlay et al. (2012)[5] recommended urine drug testing as part of the evaluation of new patients who are already taking narcotics; for those whom a narcotic will be newly prescribed; and for any patient whose dosage of a prescribed narcotic is about to be increased in order to assess the apparent lack of effectiveness of the current medication regimen.

Despite the inclusion of UDT within various treatment guidelines, there has been no consensus on the frequency or type of test recommended for monitoring, which is likely due to a dearth of empirical evidence showing improved clinical outcomes when UDT is used for patient adherence.[6,7]

3. Ireland, J., Young, B., Swedlow, A. Schedule II and Schedule III Opioids: Prescription and Payment Trends in California Workers' Compensation, CWCI Research Update, May 2014.
4. On March 1, 2013 the FDA issued an open letter to prescribers urging them to take advantage of training in opioid prescribing in light of what the agency deemed "the expanding opioid epidemic in the U.S."
5. Gourlay, D.L., Helt, H.A., & Caplan, Y.H. (June 2012). Urine drug testing in clinical practice. The Art and Science of Patient Care. Johns Hopkins School of Medicine. Retrieved from www.pharmacomgroup.com/udt/udt5.pdf
6. Christo, P. J., Manchikanti, L., Ruan, X., Bottros, M., Hansen, H., Solanki, D.R., Jordan, A.E., Colson, J. (2011, March/April). Urine drug testing in chronic pain. Pain Physician Journal,14, 123-143.
7. Webster, L.R. (2012, December).The role of urine drug monitoring in pain management. Pain Medicine News Special Edition. Retrieved from painmedicinenews.com

A review of published literature reflects a relatively low level of usage of UDT by physicians concerned with patient adherence to drug regimens,[8,9] and inadequate proficiency in interpreting test results.[10,11]

Urine drug testing that is performed for clinical purposes consists of two basic types of testing:

1. **Qualitative screening tests** are used to identify the presence or absence of drug classes. These include point-of-care (POC) tests such as dipsticks, cups and cassettes, as well as more complex chemical analyzers.
2. **Quantitative tests** are used to determine the amount of a specific drug or drug metabolite that is present. Laboratory-based specific drug identification such as gas chromatography/mass spectrometry (GC/MS), liquid chromatography tandem mass spectrometry (LC/MS/MS) or high performance liquid chromatography (HPLC) are testing methods used for this purpose.

In addition to the qualitative screening and quantitative tests, which account for the majority of UDTs in California workers' compensation, specimen validity testing, including creatinine, specific gravity and pH tests, are sometimes used to determine whether or not a urine sample has been adulterated or diluted.

Given the potential dangers of drug interactions, and the widespread abuse of painkillers and other prescription and "recreational" drugs, it is recommended that a rapid drug screening panel for pain management patients should include "opioids (including oxycodone and methadone), as well as benzodiazepines, barbiturates, marijuana, cocaine, amphetamines, and methamphetamines."[12] Furthermore, in 2010, the American Society of Addiction Medicine (ASAM) noted that there is wide variation in testing panels used in pain management and no single panel is ideal, but stated that consideration should be given to including controlled substances that a patient may have had problems with in the past in a more comprehensive panel.[13]

Although a simple point-of-care screening may be relatively inexpensive, "… the cost of UDT in the office, followed by a confirmatory test, can be expensive, with costs ranging from $250 to $1,400."[14] Manufacturers of POC screening tools may be underpinning some of the cost growth and variation, as described by Manchikanti et al. (2010): "Multiple manufacturers are lobbying for laboratory confirmation for each and every test performed, increasing the cost exponentially." Clarifying when confirmatory lab tests should be performed in addition to a point-of-care test, Manchikanti et al. (2010) stated that confirmatory lab tests should be performed if the results of a point-of-care test prompt a change in treatment.

8. Christo et al., 2011
9. Peppin, J. F. (2012, December). The use of opioids in chronic pain: Complexity and practice. Pain Medicine News Special Edition. Retrieved from painmedicinenews.com
10. Christo et al., 2011
11. Bodor, G. S. (2012, July). The laboratory's role in opioid pain medication monitoring. The Journal of the International Federation of Clinical Chemistry and Laboratory Medicine, (23)2, 1-8.
12. Manchikanti, L., Malla, Y., Wargo, B. W., Cash, K. A., Pampati, V., Damron, K. S., McManus, C. D., Brandon, D. E. (2010). Protocol for accuracy of point of care (POC) or in-office urine drug testing (immunoassay) in chronic pain patients: A prospective analysis of immunoassay and liquid chromatography tandem mass spectrometry (LC/MS/MS). Pain Physician Journal, 13, E1-E22.
13. American Society of Addiction Medicine. (2013, October 26). Drug testing: A white paper of the American Society of Addiction Medicine (ASAM). Retrieved from www.asam.org/docs/default-source/publicy-policy-statements/drug-testing-a-white-paper-by-asam.pdf?sfvrsn=4#search=%22drug%20testing%22
14. Christo et al., 2011

In response to questionable billing practices by some companies, in 2010 the Centers for Medicare and Medicaid Services (CMS) established two new health care procedure codes (HCPC G0430 and G0431)[15] for use in billing qualitative drug screening services (CMS, 2010). In 2011, CMS made additional HCPC code changes by deleting the G0430, revising G0431, and adding G0434,[16] in a further effort to address "unnecessary and excessive utilization" of screening codes.[17]

Data & Methodology

For this study, the author derived California workers' compensation medical reporting data from 2.8 million clinical lab service records extracted from CWCI's Industry Claim System database.[18] Aggregate reimbursements for those lab services totaled $108 million.

To identify the UDT services within the lab service records, the author compiled a list of the American Medical Association's Current Procedural Terminology (CPT) codes and the Centers for Medicare and Medicaid HCPC codes (Appendix 1) that are used to bill UDT services, and based on the code descriptions, categorized them as either qualitative (screening), quantitative, or validation codes. The number of UDT service codes and the number of service units associated with each service code were then tallied to determine the overall volume of UDT services within the study sample.

To analyze the relationship between UDT services and prescription drugs, all dispensed medications on claims with UDT services were identified and sorted by drug class, with results broken out by year for claims from AY 2000 through 2014. The volume of drug testing was measured by counting the individual service codes and the number of units associated with each service code, while the time measurements included the number of days between the injury date and the date a medication was first filled. The number of total treatment months for each drug class was calculated by determining the number of days between the first and last prescription fill dates and adding 30 days to account for the average duration of the terminal prescription.

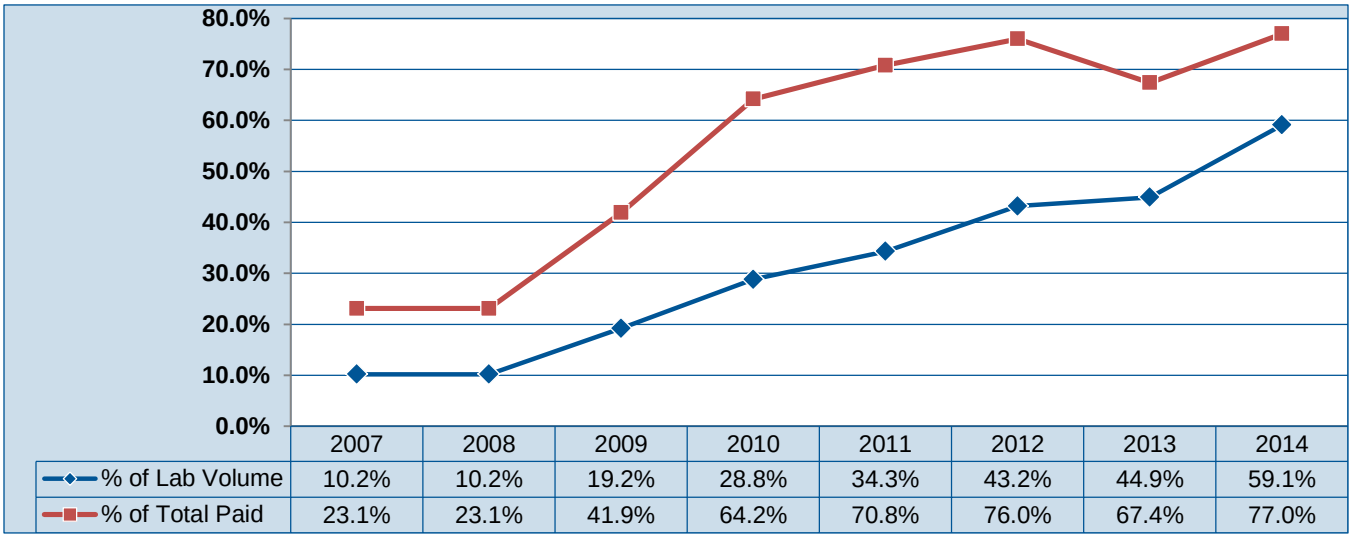
15. CY 2010 - G0430 (Drug screen, qualitative; multiple drug classes other than chromatographic method, each procedure), which was reported once per procedure, and G0431, which was reported once per drug class.
16. CY 2011 – G0434 was introduced to report qualitative point-of-care drug screen testing and to limit billing for such testing to one time per patient encounter. G0431was revised to emphasize that the code describes all screening for multiple drug classes per patient encounter.
17. Centers for Medicare & Medicaid Services. (2011). MLN Matters Number: SE1105 Revised. Retrieved from www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNMattersArticles/downloads/SE1105.pdf
18. This proprietary database, maintained by CWCI, contains detailed data, including employer and employee characteristics, medical service detail, and benefit and other administrative cost data on over 5 million workplace injuries with dates of injury between 1993 and 2015 (v16B).

RESULTS

Volume and Payment Trends

Between 2007 and 2014, Urine Drug Testing services as a percentage of all California workers' compensation laboratory services increased nearly six-fold from 10.2 percent to 59.1 percent and reimbursements for those services as a percentage of total lab payments more than tripled from 23.1 percent to 77.0 percent (Exhibit 1).

Exhibit 1: UDTs as % of California Workers' Comp Lab Services & Payments, Service Years 2007-2014



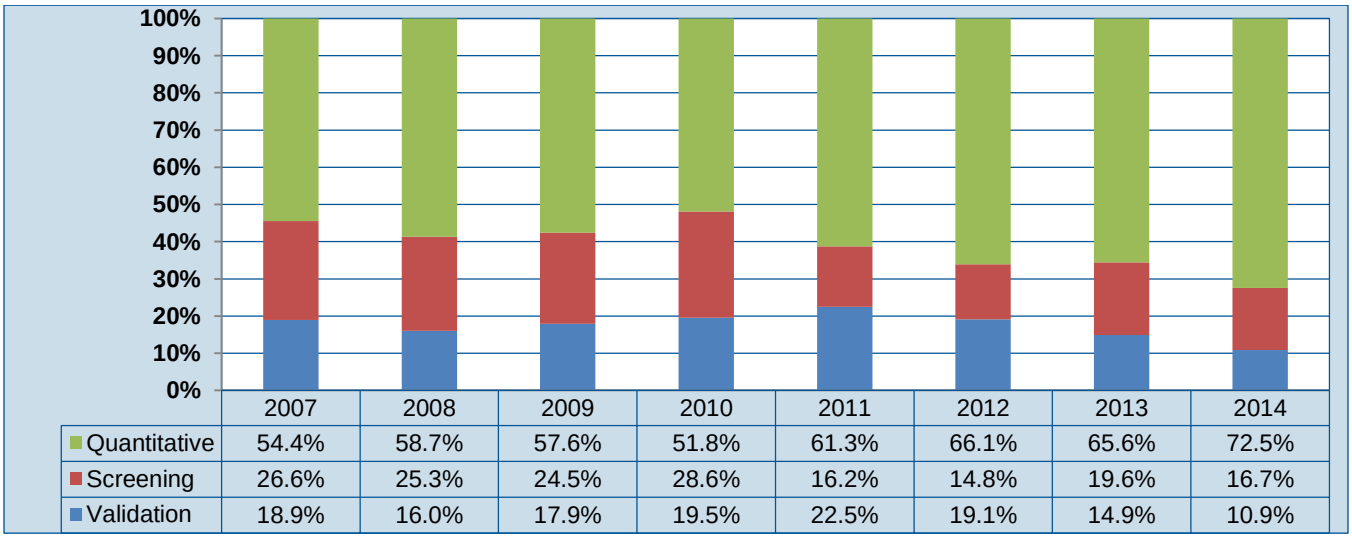
	2007	2008	2009	2010	2011	2012	2013	2014
% of Lab Volume	10.2%	10.2%	19.2%	28.8%	34.3%	43.2%	44.9%	59.1%
% of Total Paid	23.1%	23.1%	41.9%	64.2%	70.8%	76.0%	67.4%	77.0%

At the same time that the volume and reimbursement of UDT services in California workers' compensation were increasing rapidly, there also was a significant shift in the types of tests that were used. The most notable increase was in the use of quantitative tests, the growth of which coincided with changes in the UDT reimbursement policies implemented by Medicare in 2010 and 2011. As noted earlier, those included changes in the HCPC codes aimed at curbing questionable billing practices and unnecessary and excessive utilization of qualitative (screening) tests.

Changes in the Mix of UDTs and UDT Payments

Exhibit 2 shows that between 2010 and 2011, qualitative tests to identify the presence of drugs declined from 28.6 percent to 16.2 percent of California workers' compensation UDTs, while quantitative tests to measure the amount of specific drugs in a sample rose from 51.8 percent to 61.3 percent and validation tests rose from 19.5 percent to 22.5 percent. Results for the three most recent service years (2012 – 2014) show that while quantitative tests continued to account for a growing share of workers' compensation UDTs, climbing to 72.5 percent of all tests in 2014, screening tests fluctuated between 14.8 percent and 19.6 percent of the UDTs; and validation tests declined to under 11 percent of UDTs in service year 2014, less than half the proportion noted three years earlier.

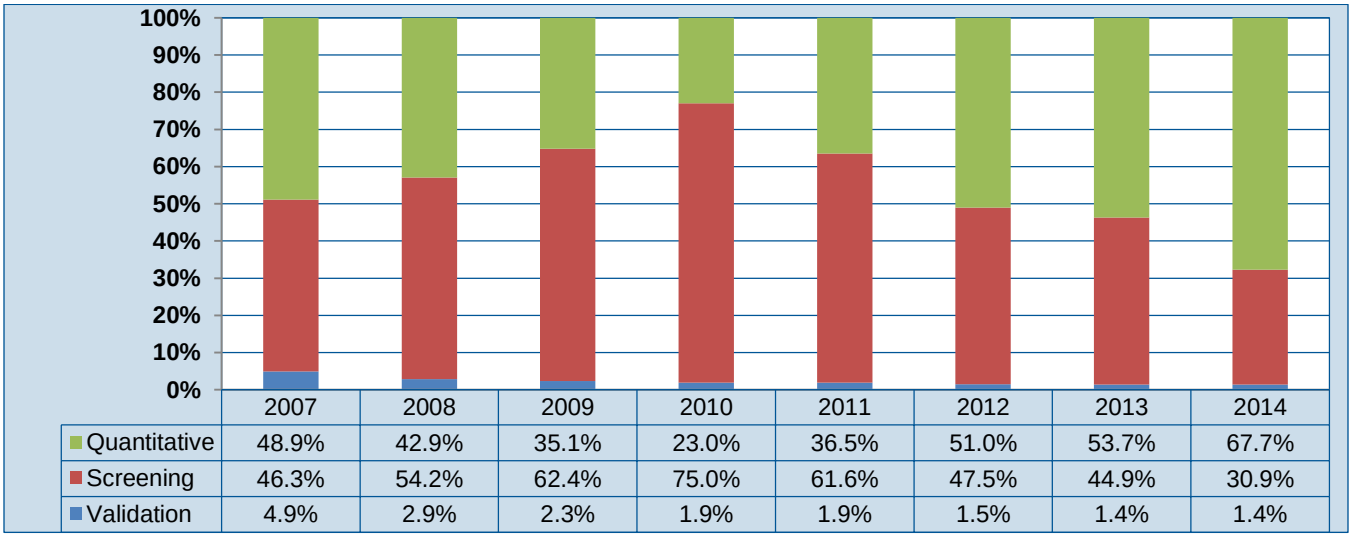
Exhibit 2: Type of Urine Drug Test as Percent of Total Urine Drug Tests, Service Years 2007-2014



	2007	2008	2009	2010	2011	2012	2013	2014
Quantitative	54.4%	58.7%	57.6%	51.8%	61.3%	66.1%	65.6%	72.5%
Screening	26.6%	25.3%	24.5%	28.6%	16.2%	14.8%	19.6%	16.7%
Validation	18.9%	16.0%	17.9%	19.5%	22.5%	19.1%	14.9%	10.9%

Exhibit 3 shows a similar shift in the distribution of total UDT payments, with the percentage of payments for quantitative tests jumping from 23 percent in 2010 to 67.7 percent in 2014, while conversely, screening payments fell from 75 percent of the UDT reimbursements in 2010 to 30.9 percent in 2014, and the amount paid for validation tests slipped from 1.9 percent to 1.4 percent of the UDT payments.

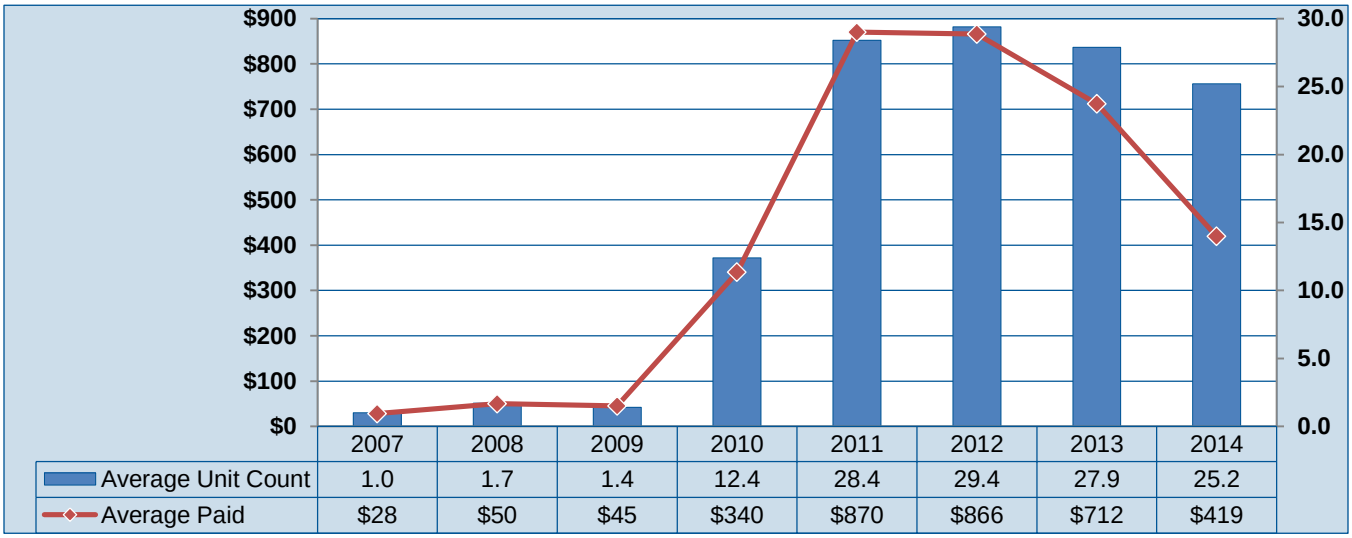
Exhibit 3: Percent of Total Paid Urine Drug Test by Type of Test, Service Years 2007-2014



	2007	2008	2009	2010	2011	2012	2013	2014
Quantitative	48.9%	42.9%	35.1%	23.0%	36.5%	51.0%	53.7%	67.7%
Screening	46.3%	54.2%	62.4%	75.0%	61.6%	47.5%	44.9%	30.9%
Validation	4.9%	2.9%	2.3%	1.9%	1.9%	1.5%	1.4%	1.4%

Exhibit 4 shows the impact of one particular screening code that was not included in the Medicare rule change in 2010. CPT code 82486 represents a service that would not be expected to be provided or billed on a regular basis since it is used to describe a chromatography test of a substance or chemical that is undergoing analysis but that is not specified under another clinical lab code. The average unit counts shown in Exhibit 4 for service years 2007 through 2014 represent the number of times CPT code 82486 was billed during a date-specific testing event for the injured employee. Note that the UDT billing data for 2007 through 2009 – the three years preceding the Medicare rule change – show CPT Code 82486 unit counts averaged between 1.0 and 1.7 per testing event, but once Medicare tightened the billing rules for other screening services in 2010, the use of CPT Code 82486 immediately skyrocketed, with the average unit count per testing event climbing to 12.4 in 2010, 28.4 in 2011 and ultimately peaking at 29.4 in 2012 – a 20-fold increase in just 3 years. Use of this code has since tapered off slightly, falling to an average of 25.2 unit counts per screening test in 2014, though that is still 17 times higher than the average for screening tests conducted in 2009.

Exhibit 4: Average Unit Counts & Average Paid for Screening Services Billed Using Code 82486 Service Years 2007-2014



	2007	2008	2009	2010	2011	2012	2013	2014
Average Unit Count	1.0	1.7	1.4	12.4	28.4	29.4	27.9	25.2
Average Paid	$28	$50	$45	$340	$870	$866	$712	$419

With the rapid growth in the use of Code 82486, the average amount paid per testing event for this type of service also rose sharply, climbing from $28 in 2007 to a record $866 in 2012 (a 30-fold increase over 5 years). Payers, however, often do not pay for all of the testing services billed, and the volume of modified or denied bills may have increased with the advent of the independent medical review (IMR) and independent bill review (IBR) processes following the passage of SB 863 in 2012, as the average amount paid per screening event for Code 82486 has fallen by half from the peak level of 2012, declining to $419 in 2014. A review of IBR data available on the Division of Workers' Compensation website offers insight into the trends shown in Exhibit 4. For example, IBR number CB14-0000627,[19] prepared by Maximus Federal Services,[20] shows the type of billing that generates high unit counts and corresponding inflated payments. In this case, the independent bill reviewer stated that the

19. http://www.dir.ca.gov/dwc/IBR/IBR-Decisions/Decisions2015/IBR2014_601-900/CB14-0000627.pdf

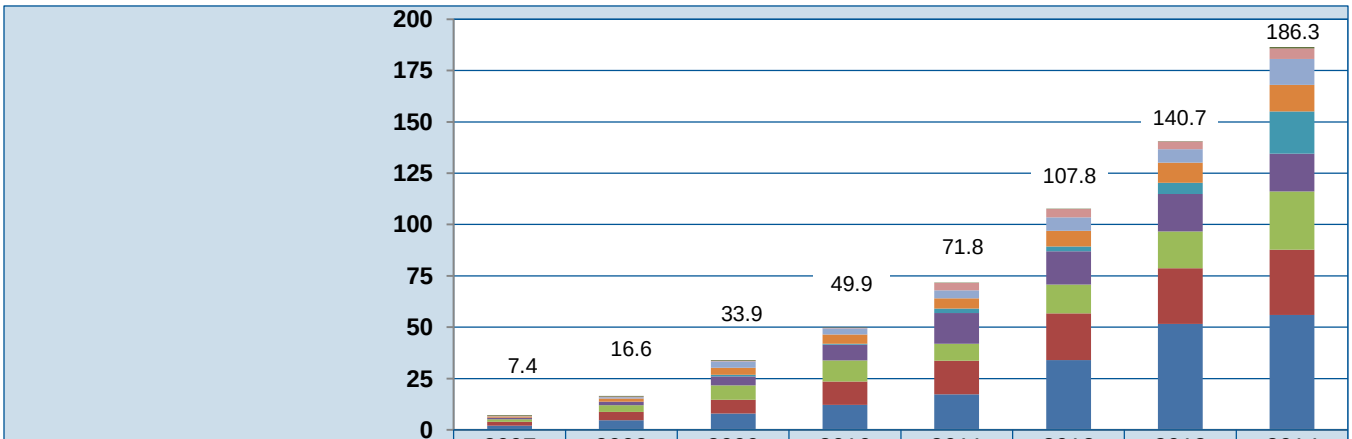
20. Maximus Federal Services, Inc. is contracted with the California Division of Workers' Compensation to provide medical treatment billing disputes and IBR decisions are posted at http://www.dir.ca.gov/dwc/IBR/IBR-Decisions/IBR_Decisions.asp

provider who submitted the bill review request had billed service code 82486 a total of 40 times and documented "qualitative test results for the following drug categories: Narcotics/Analgesics, Opiates, Oxycodone, Methadone, Benzodiazepines, Barbiturates, Amphetamines, Tricyclic Antidepressants, Antidepressants, Neuropathic and Sedative Hypnotics and Validity Testing including: Creatinine, Nitrite, Glutaraldehyde, pH. S.F. & Oxidant/PCC." The Maximus review supported converting the 40 separate 82486 service codes that had been billed by the provider to a single G0431 service code for correct payment of services.

Volume and Distribution of Quantitative Drug Tests

While the volume of both quantitative and qualitative tests in California workers' compensation has increased steadily since 2007, there has been a shift in the types of UDTs used because the growth in quantitative testing has far outpaced that of drug screening. Exhibit 5 shows the rapid and sustained increase in the number of quantitative tests that resulted in an overall 8-year growth rate of 2,431 percent for this type of testing.

Exhibit 5: Total Number of Quantitative Tests by Drug Category, Service Years 2007-2014 (000s)



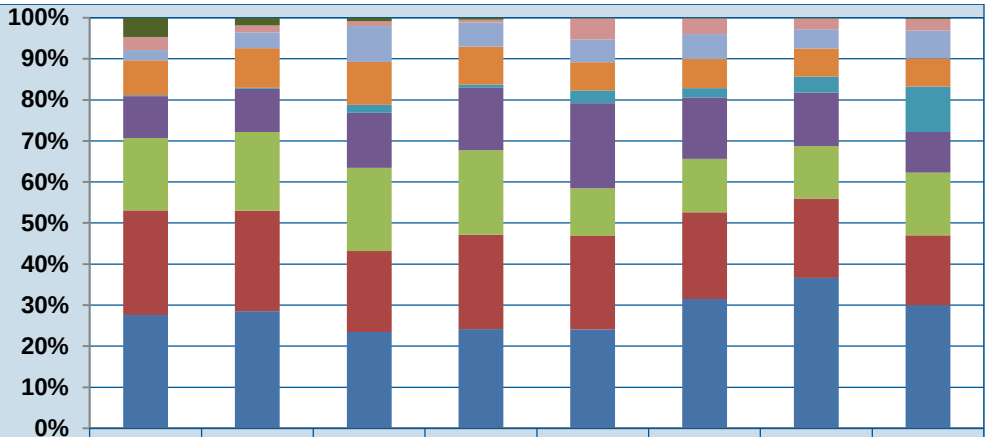
	2007	2008	2009	2010	2011	2012	2013	2014
Anti-Convulsants	0.3	0.3	0.3	0.2	0.1	0.1	0.2	0.6
Salicylate/Lidocaine/Aceteminophen	0.2	0.3	0.4	0.3	3.7	4.1	3.7	5.2
Tranquilizers	0.2	0.6	3.0	2.9	3.9	6.6	6.6	12.6
Stimulants	0.6	1.6	3.5	4.6	4.9	7.6	9.7	12.9
Antidepressants	0.0	0.0	0.7	0.4	2.2	2.3	5.5	20.6
Quantitative Panels	0.7	1.7	4.5	7.6	14.9	16.2	18.2	18.4
Sedatives	1.3	3.2	6.9	10.3	8.4	14.0	18.0	28.4
PCP/Cocaine/Ethanol	1.9	4.1	6.7	11.5	16.3	22.8	27.1	31.7
Opiates	2.0	4.7	8.0	12.1	17.3	34.0	51.6	56.0

CWCI research published last year documented the widespread use of Schedule II and Schedule III opioid analgesics to manage both acute and chronic pain in California workers' compensation and noted that while the use of these drugs has plateaued in recent years, it has done so at near record levels,[21] so it is not surprising that quantification of opiates remains the leading test by volume, followed by quantification of substances (PCP/Cocaine/Ethanol) that would be illicit or problematic if used in conjunction with prescribed medications.

21. Ireland, J., Young, B., Swedlow, S. Schedule II & Schedule III Opioids: Prescription and Payment Trends in California Workers' Compensation, CWCI Research Update, May 2014.

Exhibit 6 reorients the prior exhibit to show the distribution of quantitative testing by drug category for each of the eight years in the study sample. While Exhibit 5 measured the growth in the volume of quantitative testing between 2007 and 2014, Exhibit 6 shows the resulting shift in the mix of quantitative drug tests associated with the nine drug categories. The most notable change is the increased use of testing for antidepressants, which jumped from 0.2 percent of the quantitative tests in 2007 to 11 percent in 2014. While the percentages of quantitative testing associated with most of the drug categories fluctuated from year to year, testing for antidepressants not only showed the most significant growth over the 8-year span of the study, it also registered the most dramatic one-year change, increasing from 3.9 percent of the quantitative tests in 2013 to 11.1 percent in 2014.

Exhibit 6: Distribution of Quantitative Drug Tests by Drug Category, Service Years 2007-2014



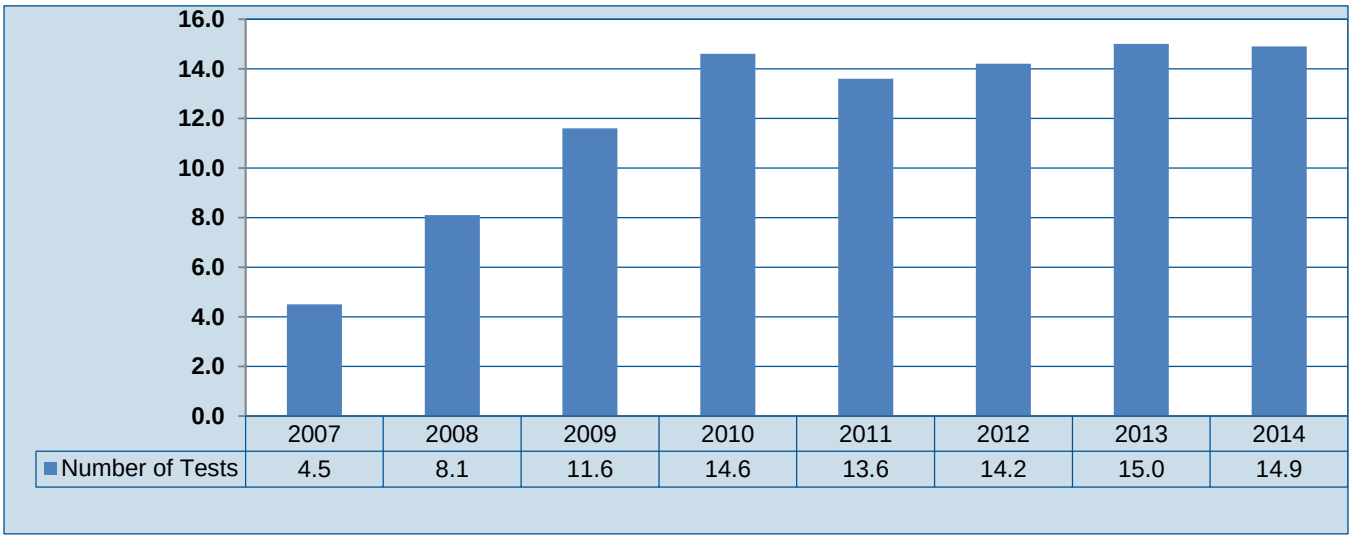
	2007	2008	2009	2010	2011	2012	2013	2014
Anti-Convulsants	4.7%	1.9%	0.9%	0.5%	0.2%	0.2%	0.2%	0.3%
Salicylate/Lidocaine/Aceteminophen	3.2%	1.7%	1.1%	0.7%	5.1%	3.8%	2.6%	2.8%
Tranquilizers	2.5%	3.8%	8.8%	5.8%	5.5%	6.1%	4.7%	6.8%
Psychoactive Stimulants	8.5%	9.7%	10.4%	9.3%	6.9%	7.1%	6.9%	6.9%
Antidepressants	0.2%	0.2%	2.0%	0.8%	3.1%	2.2%	3.9%	11.1%
Quantitative Panels	10.2%	10.5%	13.4%	15.2%	20.7%	15.0%	13.0%	9.9%
Psychoactive Sedatives	17.6%	19.2%	20.3%	20.6%	11.6%	13.0%	12.8%	15.3%
PCP/Cocaine/Ehanol	25.5%	24.5%	19.7%	23.0%	22.7%	21.2%	19.3%	17.0%
Opiates	27.6%	28.5%	23.5%	24.2%	24.1%	31.5%	36.7%	30.1%

Average Number of Drug Tests, Amounts Paid and Drug Testing Service Dates Per Claim

Breaking the drug testing data down to claim level experience, the author measured the growth in the average number of drug tests (quantitative, qualitative, and specimen validity tests) per date of service per claim, as well as the average amounts paid for drug tests per date of service, and the average number or testing service dates per claim.

Exhibit 7 shows that among claims that involved urine drug tests in the last 8 years, the average number of tests per injured employee per date of service increased 228 percent, jumping from 4.5 tests in 2007 to 14.9 tests in 2014.

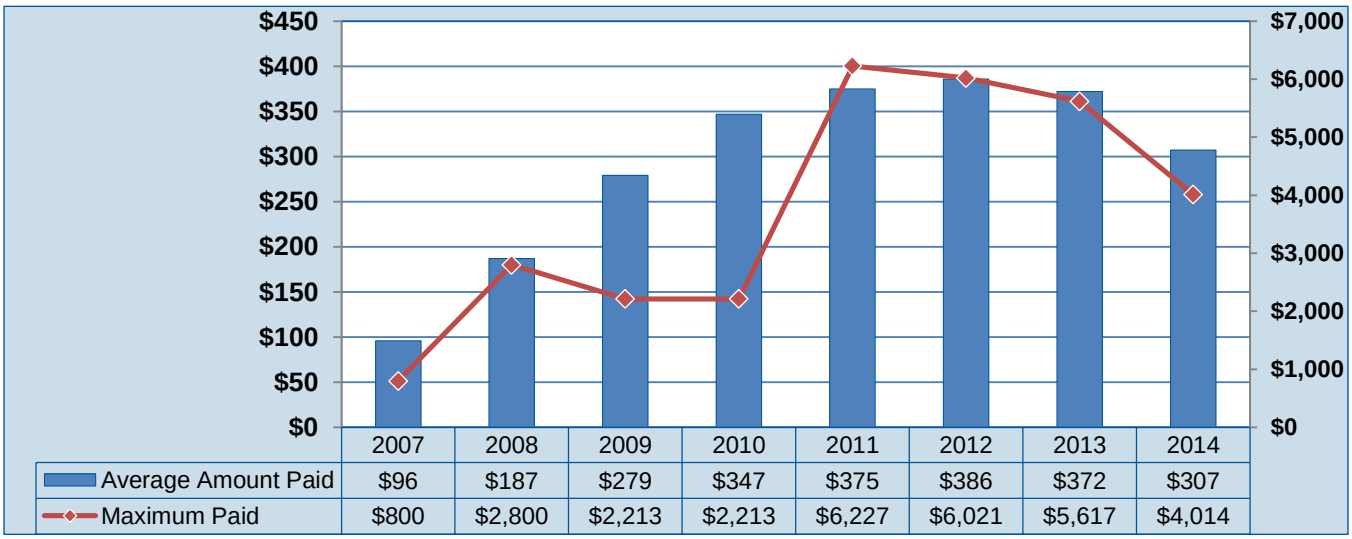
Exhibit 7: Average Number of Drug Tests per UDT Claim per Date of Service, Service Years 2007-2014



	2007	2008	2009	2010	2011	2012	2013	2014
Number of Tests	4.5	8.1	11.6	14.6	13.6	14.2	15.0	14.9

Exhibit 8 notes similar growth in the average amount paid for drug tests per date of service, which increased from $96 in 2007 to $307 in 2014 (+220 percent). Data limitations do not allow for a refined analysis of payment on a per unit basis, as multiple units may be associated with a single payment amount and payment may actually have been disallowed for excessive billed units.

Exhibit 8: Avg & Max. Paid per Claim per Date of Service for Drug Testing Service Year 2007-2014 UDT Claims

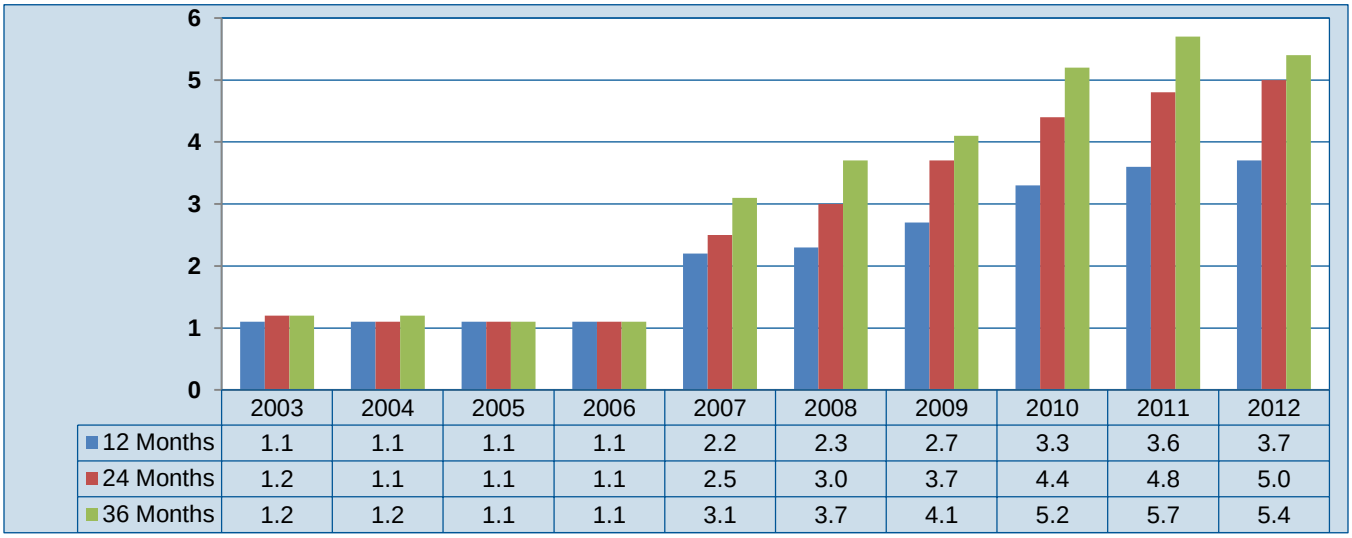


	2007	2008	2009	2010	2011	2012	2013	2014
Average Amount Paid	$96	$187	$279	$347	$375	$386	$372	$307
Maximum Paid	$800	$2,800	$2,213	$2,213	$6,227	$6,021	$5,617	$4,014

The sharp decline in the average amount paid for testing in service year 2011 coincided with Medicare's changes to the HCPC codes noted earlier, while the relative stability in the average amount paid per date of service since then has coincided with increased utilization review and bill auditing procedures implemented under the 2012 reforms.

Accident year 2003 through 2012 data were used to determine the average number of drug testing service dates per claim at three valuation points: 12 months; 24 months; and 36 months post injury. The results at each of these benchmarks (noted in Exhibit 9) show an increase in the number of testing service dates per claim starting with AY 2007 claims. While almost no change was seen in the volume of testing service dates per claim between AY 2003 and AY 2006, since then the number has climbed steadily. As a result, between 2003 and 2012 the number of service dates per claim rose 9 percent at 12 months post injury, 35 percent at 24 months post injury and 350 percent at 36 months post injury, with all of the growth noted at all three benchmarks beginning in 2007.

Exhibit 9: Average Number of Service Dates per Claim @ 12, 24 and 36 Months, AY 2003-2012 UDT Claims



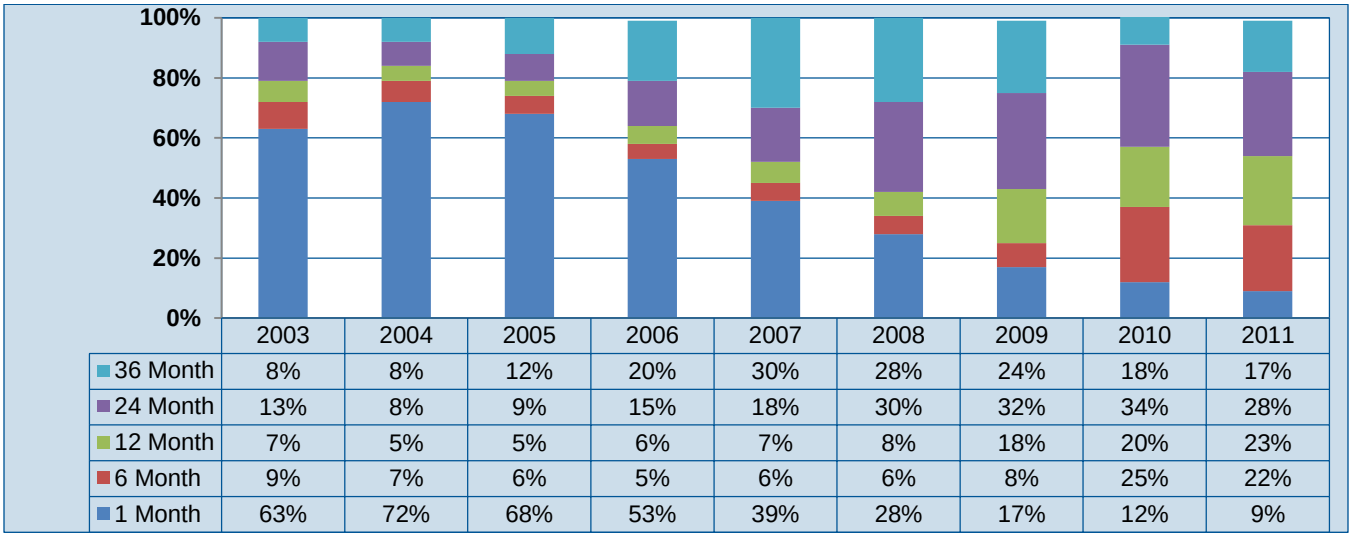
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
12 Months	1.1	1.1	1.1	1.1	2.2	2.3	2.7	3.3	3.6	3.7
24 Months	1.2	1.1	1.1	1.1	2.5	3.0	3.7	4.4	4.8	5.0
36 Months	1.2	1.2	1.1	1.1	3.1	3.7	4.1	5.2	5.7	5.4

Timing of Initial Drug Testing

While the data show dramatic growth in the volume of testing, Exhibit 10 shows that the point at which testing is first initiated also has changed. Using data from AY 2003-2011 claims that involved drug testing within three years of injury, the author determined the percentage of claims from each year that involved a UDT at 1 month, 6 months, 12 months, 24 months, and 36 months post injury, then compared the results across that 9-year span.

The percentage of claims in which the initial drug test was given in the first 30 days declined from 63 percent in AY 2003 to 9 percent in AY 2011, while the proportion of claims in which the first test was given within the first 12 months decreased from 79 percent to 55 percent, with most of that shift occurring after 2007.

Exhibit 10: Percent of Claims with 1st Urine Drug Test by Claim Age Interval, AY 2003-2011 UDT Claims

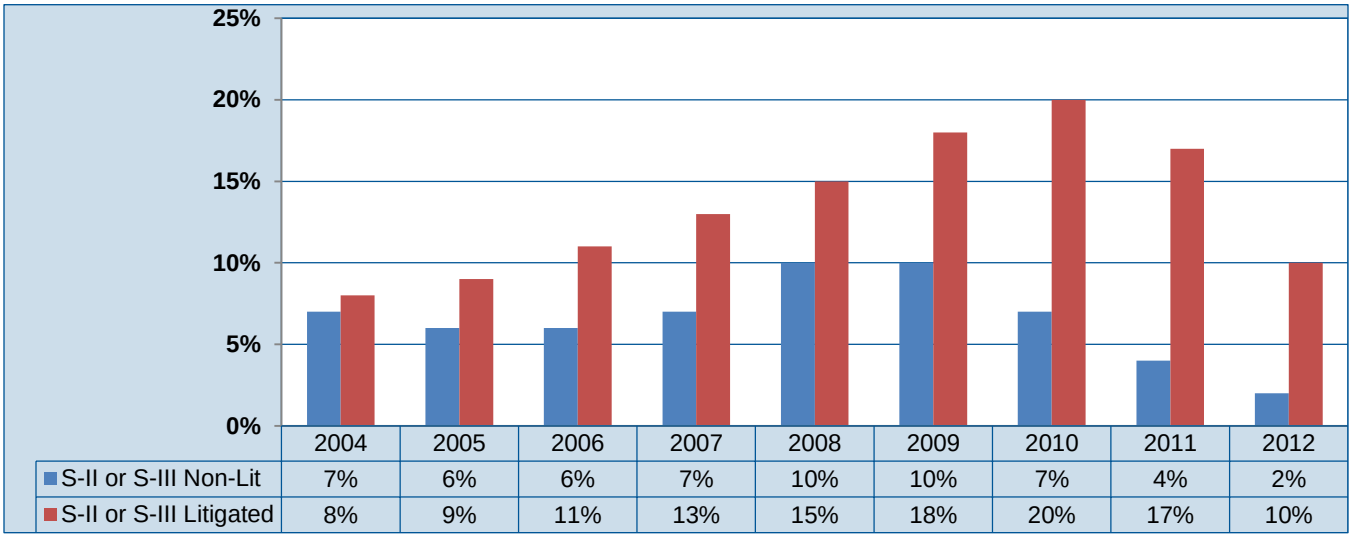


	2003	2004	2005	2006	2007	2008	2009	2010	2011
36 Month	8%	8%	12%	20%	30%	28%	24%	18%	17%
24 Month	13%	8%	9%	15%	18%	30%	32%	34%	28%
12 Month	7%	5%	5%	6%	7%	8%	18%	20%	23%
6 Month	9%	7%	6%	5%	6%	6%	8%	25%	22%
1 Month	63%	72%	68%	53%	39%	28%	17%	12%	9%

Prevalence of Drug Testing in Litigated Claims

The data suggests that the percentage of injured employees tested who receive Schedule II or Schedule III drugs may be more related to claim litigation status than the class of dispensed drug. Exhibit 11 shows that in AY 2004, the percentage of tests associated with Schedule II drugs was similar for litigated and non-litigated claims, but over time urine drug testing became far more prevalent among injured employees in litigated claims. By AY 2010, 20 percent of injured employees in litigated claims who had been prescribed Schedule II or Schedule III drugs were drug tested – nearly 3 times the rate for injured workers who had been prescribed those drugs but whose claims were not litigated. Data from the most recent claims in the sample (AY 2012) show the drug testing rate among injured workers with Schedule II and Schedule III prescriptions was 10 percent – a rate that will undoubtedly increase as the claims age -- though that level of drug testing was five times the rate noted for comparable claims in which there was no attorney involvement.

Exhibit 11: Percent of Claims w/S-II or S-III Prescriptions & UDT by Litigation Status, AY 2004-2012 Claims

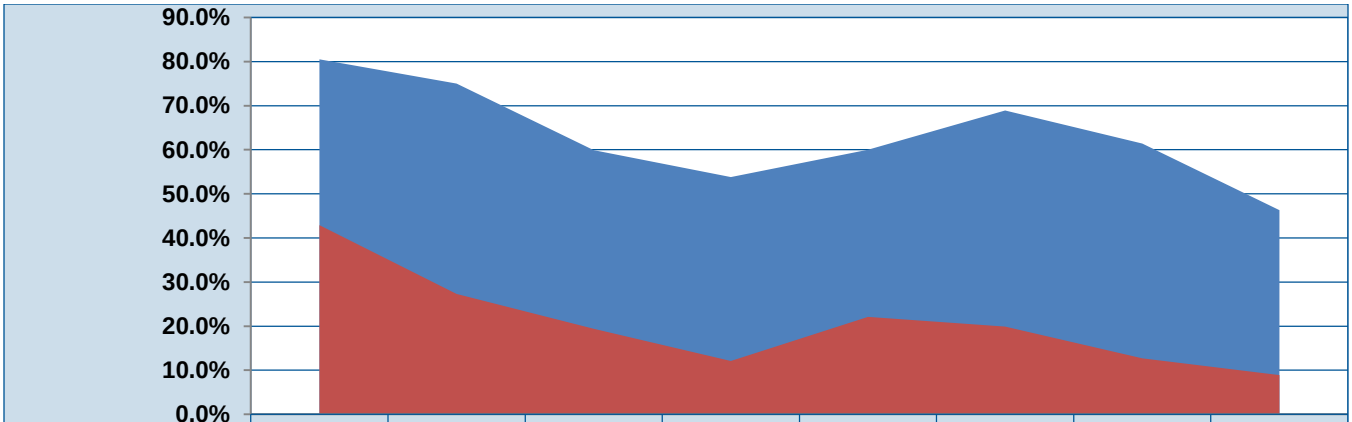


	2004	2005	2006	2007	2008	2009	2010	2011	2012
S-II or S-III Non-Lit	7%	6%	6%	7%	10%	10%	7%	4%	2%
S-II or S-III Litigated	8%	9%	11%	13%	15%	18%	20%	17%	10%

Concentration of UDT Services by Providers

An analysis of the providers with the highest volume of billing for UDT services over time reveals another distinct shift. Exhibit 12 shows the percent of total UDT payments that went to the top ten providers (or labs) and to the top provider during each service year from 2007 thru 2014. More than 80 percent of the payments for UDT services rendered during 2007 went to just ten providers, with nearly 43 percent of the payments going to a single provider. By 2014, drug testing in workers' compensation had become far less concentrated among the high-volume providers, with the top ten providers or labs accounting for less than half (46.3 percent) of the 2014 drug testing payments, while the top provider alone was down to just under 9 percent of the drug testing dollars.

Exhibit 12: Percent of Total UDT Payments, Top 10 & Top Individual Provider, Service Years 2007-2014



	2007	2008	2009	2010	2011	2012	2013	2014
Top 10 Providers	80.5%	75.0%	59.9%	53.8%	60.0%	68.9%	61.4%	46.3%
Top Provider	42.9%	27.3%	19.4%	12.1%	22.1%	19.9%	12.7%	8.9%

One factor that helped fuel this shift was a change in the type of provider rendering UDTs. A review of the billing data shows that in 2008, 74 percent of the UDT services were provided by 4 laboratories. During the ensuing four years, the mix of providers reflected not only an adjustment in market share by the big laboratories, but also a significant increase in the number of non-laboratory providers billing for these services. During that same period, the total number of UDT providers more than doubled from 428 in 2007 to 876 in 2014, with many of the providers who entered the market after 2007 generating a high volume of tests. Among the top ten providers with the highest total reimbursements in 2014, seven were in business for less than four years. Data limitations make it difficult to identify the type of provider billing for urine drug testing services in all instances, but it is clear that there has been a significant increase in the number of non-laboratory service providers represented in the population of providers.

DISCUSSION

This study documents a significant rise in the number, variety and intensity of urine drug testing within the California workers' compensation system. It is not however a unique California phenomenon. In a recent multi-state study on injured workers with long-term opioid use the percentage of workers who received at least one drug test increased from 16 to 25 percent.[22]

There is an ongoing debate over the cost and the benefits of urine drug testing, not only in workers' compensation, but in all health systems. In their 2011 analysis of the role of UDT in the treatment of chronic pain, Christo et al opined: "UDT has been used, misused, and abused due to financial incentives, and the influence of medical licensure boards, the Drug Enforcement Agency (DEA), and other governmental agencies."[23]

On the other hand, in its joint research with Laffer Associates, the Millennium Research Institute (MRI), the research and advocacy arm of Millennium Laboratories, argued that there is a direct relationship between the number and frequency of UDTs for clinical pain management and the benefits to the patient and society as a whole, estimating that billions of dollars in potential savings could be derived from the use of these tests:

"…we estimate that the chronic pain population that currently uses opioids is approximately 6.8 million people. If the entire pain population that use opioids received 2 UDT's, the total aggregate benefits would be between $7.4 billion and $9.5 billion. If the entire pain population received 6 UDT's, the total aggregate benefits would be between $19.5 billion and $25.7 billion. If the entire pain population received 12 UDT's, the total aggregate benefits would be between $31.1 billion and $43.5 billion (Laffer, et al., 2011, p. 16)."[24]

The correct public policy perspective toward the use of UDTs undoubtedly lies between these two diverse opinions. It is clear that any objective assessment of the value of drug testing must focus on outcomes and demonstrate direct, positive correlations between the performance of UDTs, clinical outcomes and drug abuse deterrence, which can only occur if relevant tests are effectively used in patient-specific clinical decision-making. Performance of a test, or in the case of UDT's multiple tests, does not automatically translate into direct savings, and it is less likely to produce savings if testing is prompted by a desire to increase revenue based on the frequency of use.

The benefits of using UDT to monitor patient adherence to medication regimens and identify potential substance abuse are well documented and as such have been included in the proposed Medical Treatment Utilization Schedule opioid treatment guidelines currently in development. The purpose of testing is to assist in medical management, and as such, testing should be done based on medical necessity related to a claimant's medical presentation, dispensed drugs and evidence-based medicine protocols. Financial incentive should not be the driving force. Nevertheless, this study documents a steady increase in the number of tests being performed, which reflects not only an increase in the number of injured employees being tested, but in the number of service dates and the number of tests per service date. In addition, the study confirms a significant shift in billing patterns since

22. Wang, D. Longer-Term Use of Opioids, 2nd Edition. Workers Compensation Research Institute, 2014

23. Christo et al., 2011

24. Laffer, et al., An Economic Analysis of the Costs and Benefits Associated with Regular Urine Drug Testing for Chronic Pain Patients in the United States, p. 16. Laffer Associates and Millennium Research Institute, Washington D.C., October 2011.

2007, exemplified most strikingly by the use of CPT code 82486, suggesting that non-clinical economic interests may be influencing both the volume of tests being performed as well as the paid amounts.

The shifts in volume and paid costs have resulted in part from the need to monitor injured employees who are prescribed multiple medications, including opioids, on a long-term basis. It is apparent from the data, however, that billing and provider changes also reflect a shift from laboratory-based services to clinic- and physician office-based services, which is indicative of the practice that was the subject of a Wall Street Journal exposé on the rising use of UDT for Medicare patients.[25] That investigation found that as mass-spectrometry equipment has become smaller and less expensive, clinical practices have installed the machines on-site or contracted with management companies to do so in order to realize financial benefits that they were unable to achieve in the past when these types of tests were performed by large laboratories.

In an effort to address the changes in the technology that is used to perform the analysis of drug levels, the AMA has recently made some significant changes to the CPT codes that are used to identify various UDT services. These changes became effective in 2015; however Medicare has delayed adoption of this set of codes pending further valuation analysis. Further complicating an already complicated billing picture, Medicare has defined a table of codes to be used in lieu of the new AMA CPT codes and maintained the 2014 valuation.

In addition to changes in codes and their definitions, Medicare is also contemplating changes to coverage rules in an effort to address questionable billing practices. There are currently two draft changes for Medicare local coverage determination that are intended to address the continued misuse and abuse of urine drug testing (see Appendix 2). Once Medicare adopts those rules, the California Division of Workers' Compensation may adopt them within the rules in the Clinical Lab Fee Schedule, which would provide clinicians, labs and payers needed clarification. Absent that, it appears likely that the volume of UDTs that do not correlate with changes in clinical demographics will continue to increase, even after factoring in the growing recognition of the opioid epidemic.

Drug testing is a new and escalating complement to the broader issue of growing pharmaceutical utilization and cost in the California workers' compensation system. Recent data on AY 2012 claims show prescription drug and durable medical equipment reimbursements accounted for 13.6 percent of total medical payments within the first two years of injury treatment, double the percentage noted for AY 2006 claims. Historically, it has been shown that pharmacy payments as a proportion of total workers' compensation treatment costs can increase as much as 20 percent as claims age, so that proportion will likely continue to increase. With prescription drugs consuming an increasing share of the workers' compensation medical dollar in recent years, the selection of drugs has remained highly controversial, as evidenced by recent data showing that 45 percent of all medical disputes resolved by independent medical review last year involved prescription drug requests. Meanwhile, the profusion of in-office drug testing now runs in tandem with physician dispensed drugs, fueling additional concerns and controversy. The confluence of these issues will remain a focus of future studies and public policy debate.

25. Weaver, C., Matthews, A. "Doctors Cash In On Drug Tests for Seniors and Medicare Pays the Bills." The Wall Street Journal, Nov. 10, 2014.

Appendix 1 – Urine Drug Testing Procedure Codes
80100-Drug screen, qualitative; multiple drug classes chromatographic method, each procedure
80101-Drug screen, qualitative; single drug class method (eg, immunoassay, enzyme assay), each drug class
80102-Drug confirmation, each procedure
82486-Chromatography, qualitative; column (eg, gas liquid or HPLC), analyte not elsewhere specified
G0430- Drug screen, qualitative; multiple drug classes other than chromatographic method, each procedure
G0431-Drug screen, qualitative; multiple drug classes by high complexity test method
G0434-Drug screen, other than chromatographic; any number of drug classes
80152-Assay of amitriptyline
80154-Assay of benzodiazepines
80156-Assay of carbamazepine; total
80160-Assay of desipramine
80164-Assay, dipropylacetic acid
80166-Assay of doxepin
80168-Assay 0f ethosuximide
80174-Assay of imipramine
80176-Assay of lidocaine
80182-Assay of nortriptyline
80184-Assay of phenobarbital
80185-Assay of phenytoin, total
80196-Assay of salicylate
80201-Assay of topiramate
80299-Quantitation of drug, not elsewhere specified
82003-Assay of acetaminophen
82055-Assay of ethanol
82145-Assay of amphetamines
82205-Assay of barbiturates
82491-Chromatography, quantitative, column (eg, gas liquid or HPLC); single analyte not elsewhere specified, single stationary and mobile phase
82492-Chromatography, quantitative, column (eg, gas liquid or HPLC); multiple analytes, single stationary and mobile phase
82520-Assay of cocaine
82570-Assay of urine creatinine
82646-Assay of dihydrocodeinone
82649-Assay of dihydromorphinone
82742-Assay of flurazepam
83789-Mass spectrometry and tandem mass spectrometry (MS, MS/MS), analyte not elsewhere specified; quantitative, each specimen
83805-Assay of meprobamate
83840-Assay of methadone
83925-Opiate(s), drug and metabolites, each procedure
83986-Assay of body fluid acidity
83992-Phencyclidine (PCP)
84311-Spectrophotometry, analyte not elsewhere specified

APPENDIX 2

The *draft "Local Coverage Determination (LCD): Controlled Substance Monitoring and Drugs of Abuse Testing (DL35105)"* prepared by the Medicare Administrative Contractor (MAC), Palmetto[26], would include the following as non-covered services as policy (Palmetto, 2014, p.11-12):

1. LC-MS/MS and GC-MS at Point-of-Care Physician Office Labs (POC/POL):
   GC-MS and LC-MS/MS/MS are not point of care testing technologies and not reasonable and necessary for the immediate care and management of patients. They require extensive knowledge of the technology, many months to validate individual assays, 4-8 hours of complex pre-analytic, analytic and post analytic specimen handling, and compliance with CLIA regulations.

   Palmetto GBA will no longer reimburse for drug confirmation testing, specific drug quantitation testing or nonspecific analyte testing at POC/POLs and physician partnered laboratories. Test services referred from one physician lab to another physician's lab will not be reimbursed. Only independent reference labs will be reimbursed for GC-MS or LC-MS/MS testing.

2. Standing Orders
   Only patient-specific orders documented in the medical record are considered reasonable and necessary. Nonspecific orders, aka "standing orders," are not considered reasonable and necessary for patient management and will be denied. When an unexpected drug(s) or metabolite(s) is observed on a single procedure (single solid/mobile phase procedure), the laboratory is required to contact the ordering physician to obtain a written order for confirmation/quantitative testing if the physician determines the drug/metabolite has clinical significance for the management of the given patient. Not all incidental drug(s) or metabolite(s) require confirmation/quantitation. Standing orders for identification of incidental drug(s) or metabolite(s) are not covered by Medicare. The revised order must be documented in the patient's medical record.

   Laboratories must have on record and available upon request a physician signed, patient-specific order for every test performed and reported for reimbursement.

3. Semi-qualitative (numerical) EIA or IA screening tests billed as a confirmatory/quantitative/definitive test result.
4. Confirmatory/quantitative drug testing panel(s) performed by a reference laboratory.
5. Routine non-specific or comprehensive orders for drug qualitative screening, and/or confirmatory/quantification testing.
6. Specimen validity testing.
7. Direct submission of specimens for confirmatory/quantitative testing without prior qualitative testing (EIA/IA).

26. Noridian Healthcare Solutions also submitted the same proposal under DL351

About the Author

Stacy L. Jones is a Senior Research Associate at the California Workers' Compensation Institute.

Acknowledgements

The author would like to acknowledge and thank the following individuals for providing their insight and technical assistance in the preparation of this analysis:

- **Alex Swedlow**, President, California Workers' Compensation Institute
- **Rena David**, Senior Vice-President, Research & Operations, California Workers' Compensation Institute
- **Steve Hayes**, Senior Research Associate, California Workers' Compensation Institute
- **Brenda Ramirez**, Claims and Medical Director, California Workers' Compensation Institute
- **Bob Young**, Communications Director, California Workers' Compensation Institute

California Workers' Compensation Institute

The California Workers' Compensation Institute, incorporated in 1964, is a private, nonprofit organization of insurers and self-insured employers conducting and communicating research and analyses to improve the California workers' compensation system. Institute members include insurers that collectively write more than 70 percent of California workers' compensation direct written premium, as well as many of the largest public and private self-insured employers in the state. Additional information about CWCI research and activities is available on the Institute's web site (www.cwci.org).