Research Brief

YOUR WORKERS COMPENSATION RESOURCE—Comprehensive Data, Objective Analysis, Meaningful Results

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Medical Services for Claims 20 or More Years Old

It is likely that more than 10% of the cost of medical benefits for the workplace injuries that occur this year will be for services provided more than two decades into the future. That percentage has been growing and might continue to grow. This study looks at workers compensation medical services provided beyond 20 years after the injury, with a view toward anticipating:

- Which medical service categories will account for the largest shares of costs
- Future treatment and utilization that will drive those costs

This study first looks at the demographics of claimants who are still being treated for job-related injuries that were suffered more than two decades ago. The focus then shifts from patients to their medical care, looking at medical costs by service and diagnosis categories. Some key findings concerning services provided from 20 to 30 years following the date of injury are as follows:

- Patients are predominantly male, more so than can be explained by historical gender differences in the workforce
- Deteriorating medical conditions of the more elderly claimants is not a main cost driver; indeed, claimants younger than age 60 cost more per year, per claimant, to treat than those older than age 60
- Relative to services within the first 20 years after injury, care provided later has a significantly greater portion of cost going for prescription medications, supplies, home health services, and the maintenance of implants, orthotics, and prosthetics.

BACKGROUND

The study uses a new source of medical data on workers compensation (WC) cases—NCCI's Medical Data Call (MDC). The MDC captures transaction level detail on the medical bills processed on or after July 1, 2010, including dates of service, charges, payments, procedure codes, and diagnoses codes. Carriers are not required to report transactions for services provided more than 30 years after the date of the injury. NCCI collects the Call for the 35 jurisdictions where NCCI provides ratemaking services and for seven additional states on behalf of the independent state rating organizations.[1]

While the MDC will eventually collect the entire medical history for many injuries occurring after July 1, 2010, it does not capture the initial care on most injuries that occurred prior to 2010. Accordingly, it makes sense that an early use of the MDC focuses on what it now costs to treat older, but still active, cases.

For this study, the MDC experience was restricted to:

- Services provided between January 1, 2009 and April 1, 2011
- Services provided within 30 years from injury
- Transactions processed between July 1, 2010 and April 1, 2011

Data used in this study represents approximately a 73% market share of workers compensation insurance sold by private carriers and state funds for the jurisdictions included in the Call.

The cost and mix of services currently provided for older claims might differ substantially from the cost and mix of services that will be provided in the future for recent claims. As the MDC captures experience over a longer period, it will become more useful for analyzing the emergence of medical costs for more recent claims.

[1] The 35 jurisdictions for which NCCI provides ratemaking services are AK, AL, AR, AZ, CO, CT, DC, FL, GA, HI, IA, ID, IL, KS, KY, LA, MD, ME, MO, MS, MT, NE, NH, NM, NV, OK, OR, RI, SC, SD, TN, UT, VA, VT, and WV. The seven independent bureau states for which NCCI collects the Medical Data Call are IN, MA, MN, NC, NJ, NY, and WI.

FINDINGS

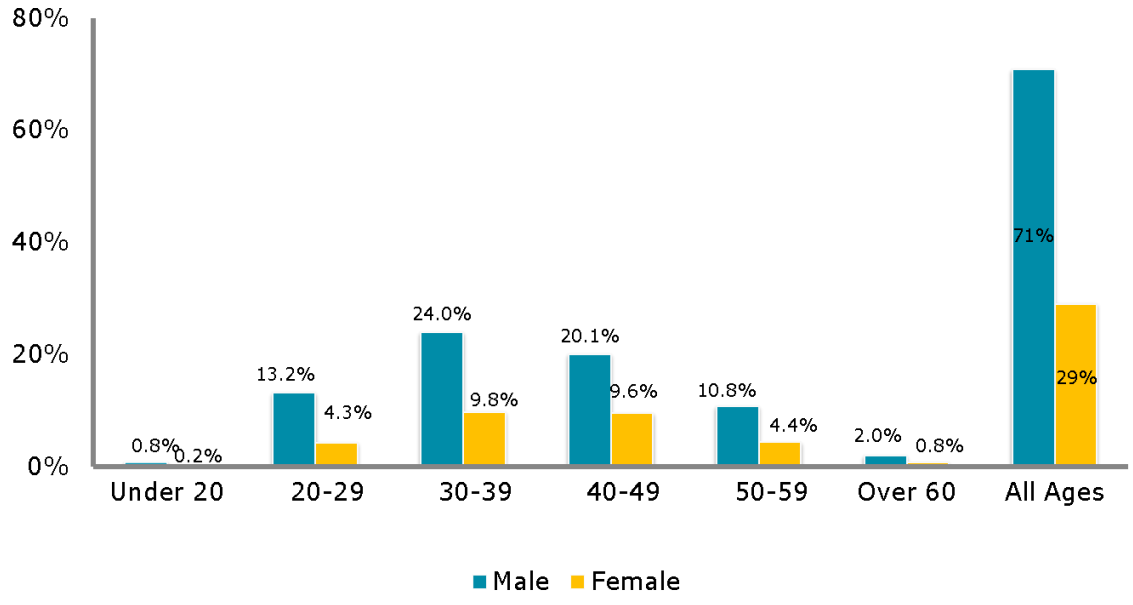
We begin with a look at the demographics of claimants who are being treated for job-related injuries more than 20 years after the date of injury. The focus then changes to the drivers of costs of "late-term care," by which we mean medical services provided 20 to 30 years after the injury.

Demographics of Late-Term-Care Claimants

Even at this early stage of reporting, the MDC provides important demographic information on late-term-care claimants and costs. Exhibit 1 shows the distribution of late-term-care claimants by gender and age at injury, and Exhibit 2 shows the distribution of dollars paid for late-term care by patient gender and age at treatment:

- Male claimants are, on average, one year younger than female claimants (male and female average ages at injury are 39 and 40, respectively; average ages at treatment are 61 and 62).
- Men were 71% of the claimants treated late-term. This is much higher than the corresponding percentage for men in the workforce, which dropped from 57% in 1980 to 55% in 1990.[2]
- Male patients accounted for an even greater 76% of the late-term payments. It follows that the average cost per year to care for a male patient was about 30% percent higher than for a female patient.[3]

Exhibit 1: Late-Term-Care Claimants by Gender and Age at Injury



[2] Figures derived from Table 5 of the paper, "A Century of Change: the US Labor Force, 1950–2050" by M. Toossi, which appeared in the *Monthly Labor Review* in May 2002, p. 24, and is available at **bls.gov.**

[3] Male cost per claim/female cost = (76/71) ÷ (24/29) = 1.293.

Exhibit 2: Late-Term-Care Payments by Gender and Age at Treatment

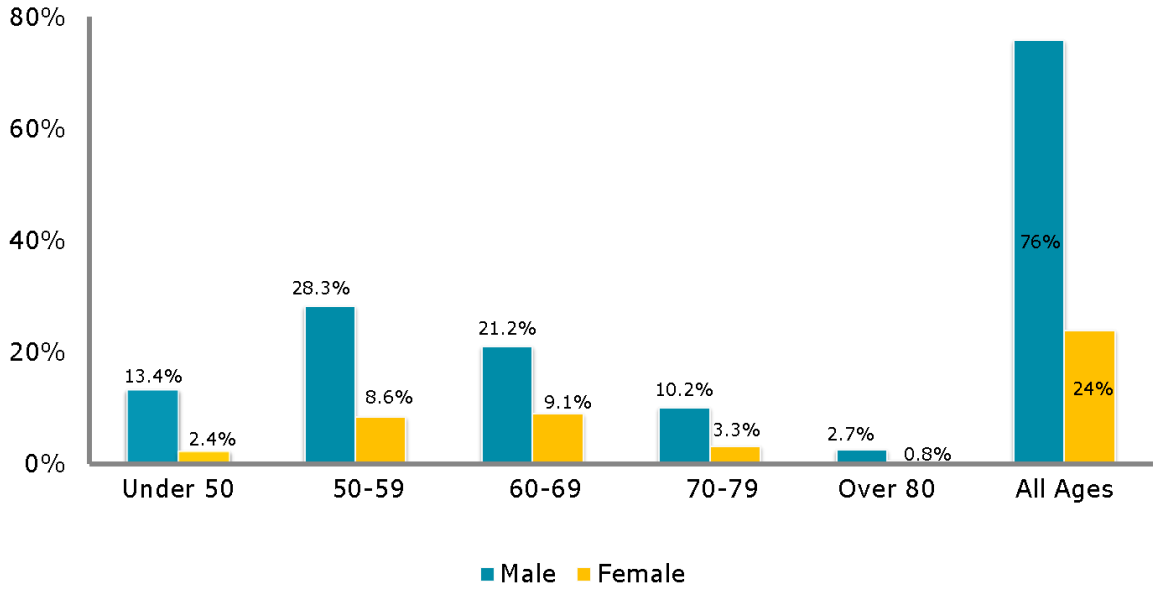


Exhibit 3 compares distributions of the number and dollars of late-term-care payments by age at treatment. Patients younger than age 60 account for a little more than half (53%) of the cost of late-term care but a little less than half (48%) of the number of services. It follows that the average cost per service for a patient younger than age 60 was about 20% greater than for an older patient.[4]

To look at overall annual costs by age of claimant, we split claimants into an older group—those born before 1951—and a younger group. This split is not exactly the same as that just discussed, which was based on claimant age at date of service; this is based just on date of birth. Here, the younger group—those born before 1951—accounts for nearly half (49%) of the cost of late-term care but substantially less than half (38%) of the claimants. This suggests that the younger claimants—roughly those younger than age 60—cost about 55% more per year to care for than do older claimants.[5]

[4] $(53/48) \div (47/52) = 1.222$.

[5] $(49/38) \div (51/62) = 1.568$.

Exhibit 3: Late-Term-Care Number of Services and Payments by Age at Treatment

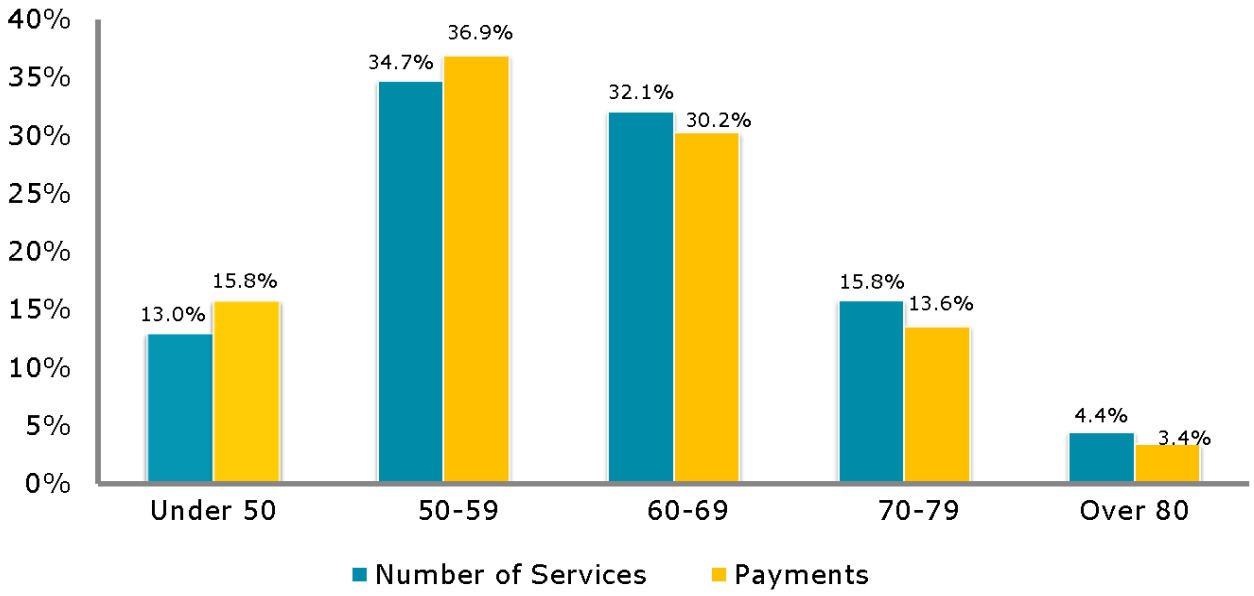
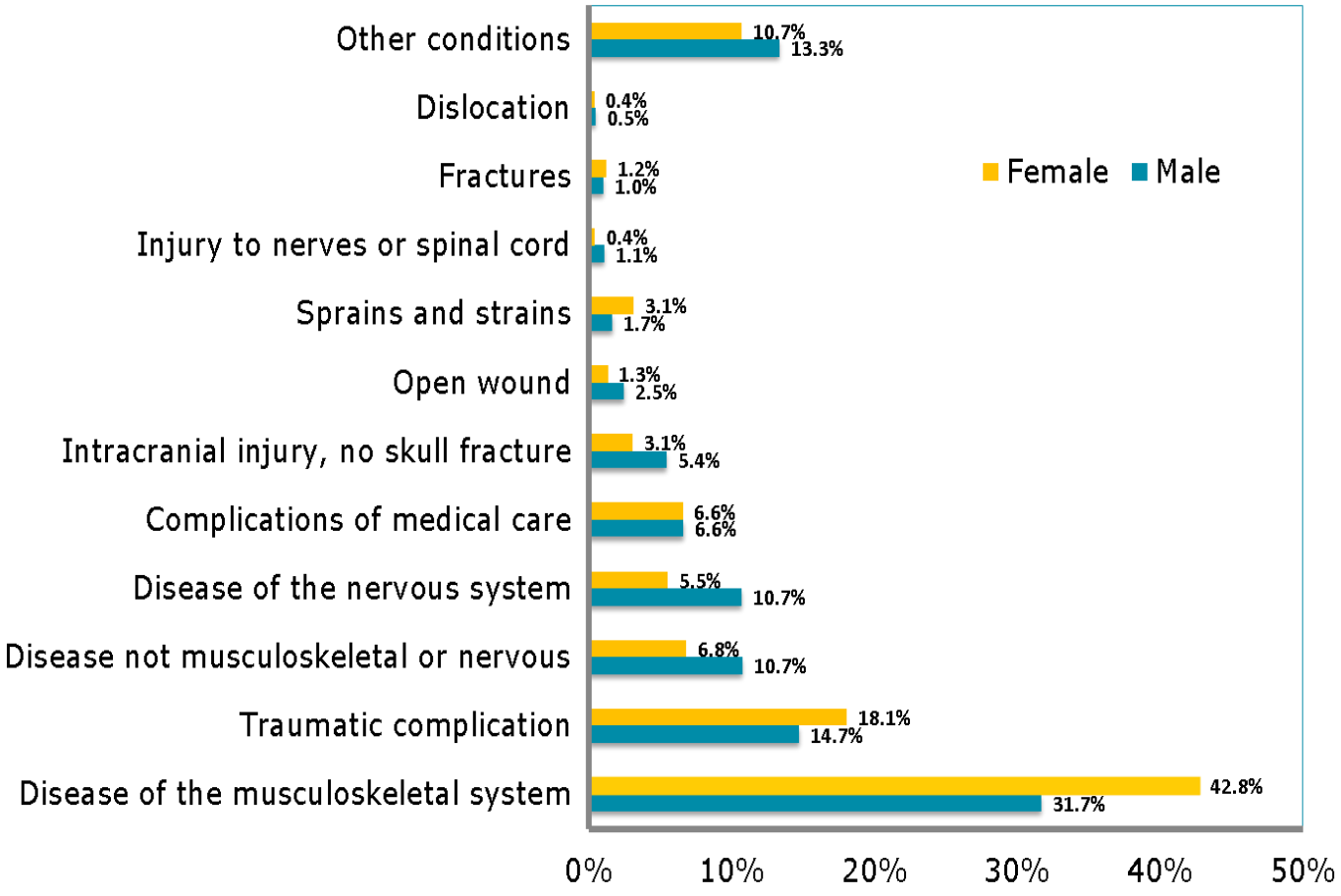


Exhibit 4 looks at the mix of medical conditions treated late-term. Disease cases, together with cases with complications from a medical procedure, account for more than three-fourths of late-term payments (75% for men, 80% for women). By contrast, treatments for traumatic conditions (other than complications) account for less than one-fifth of the cost of late-term care.

Exhibit 4: Late-Term-Care Costs
Male and Female Patient Shares by Medical Condition



Late-Term Care by Service Category

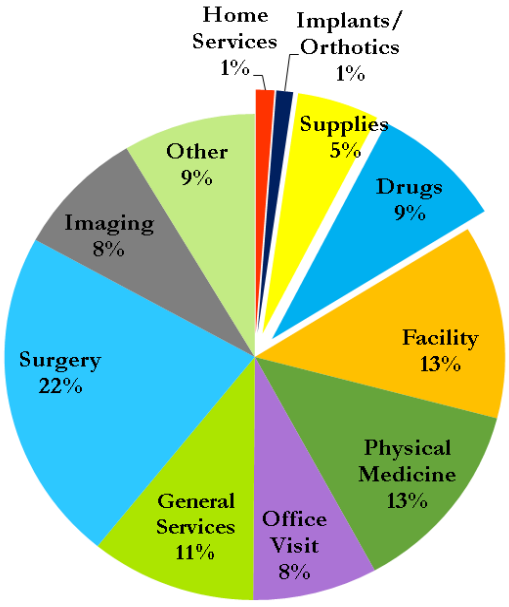
Exhibit 5 compares the distributions of payments for medical services provided within the first 20 years after injury and for late-term care (20 to 30 years after injury). The pie charts reflect the distributions of payments for services during the calendar period of the study. In this chart:

- The Office Visit category includes outpatient services and consultations
- Payments to ambulatory surgical centers and anesthesia services are included under Surgery
- The Other category includes transportation, vision, dental, and hearing services

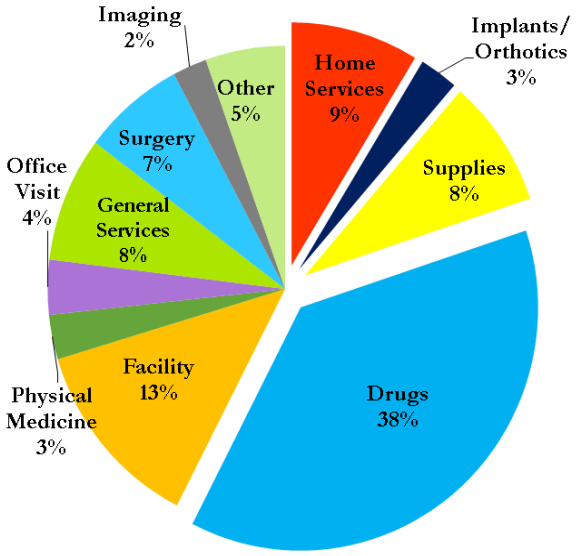
Drugs and home health services, combined with implants, orthotics, prosthetics, and other supplies, make up less than one sixth of the cost for cases under 20 years old, but well over half of the outlay for late-term care.

Exhibit 5: Distribution of Payments by Service Category

Services Provided Within 20 Years After Injury



Late-Term Care—Services Provided From 20 to 30 Years After Injury



The Drugs category shows the greatest difference between early and late-term care, increasing by almost 30 percentage points late-term. That increase is followed by Home Services, which grew by nearly 8 percentage points. The largest decline is a drop of 15 percentage points for Surgery, followed by a 10-point drop in the Physical Medicine share. These shifts reflect a change in the focus of care from return of function to relief of pain.

The mix of medical services 20 years from now for injuries that have occurred recently (and will still be getting medical services) might differ substantially from the mix of services for the late-term-care claims shown in Exhibit 5. Most of the late-term-care services in this study are for injuries that occurred in the 1980s. For example, for prescription drugs, there is evidence that the late-term-care share for recent injuries might be greater than the 38% shown in Exhibit 5. The 2011 NCCI study of prescription drugs in workers compensation[6] looks at medicines given during the first 16 years of treatment. That study projects that for injuries that occurred in 2009, more than 50% of the medical costs to be paid on those claims from 2020 to 2024 (11 to 15 years later) will be for prescription drugs.

Drugs, home health services, orthopedic devices (e.g., implants, prosthetics, and orthotics), and medical supplies stand out as the four broad service categories with the greatest increase in their payment share between services provided within 20 years of injury and services provided 20 to 30 years after injury. The discussion that follows looks at each.

[6] B. Lipton, C. Laws, L. Li, "Workers Compensation Prescription Drug Study: 2011 Update," NCCI Research Brief, August 2011, available at **ncci.com**.

Late-Term Prescription Drugs

Because drugs account for a large proportion of late-term-care costs, prescription data can suggest the nature of late-term care. Exhibit 6 compares the share of WC medication costs for several specific drugs. It compares late-term-care experience with all WC medication costs in 2009[6] and includes the top 10 WC drugs, either overall or within late-term care:

- The top drug, OxyContin, accounts for 6% of WC medication costs in 2009 and that share rises another 5 percentage points to 11% for late-term care
- The shares for opioid chronic pain medications, such as Oxycodone (OxyContin, Percocet) and Fentanyl (Duragesic), are generally higher within late-term care than within all medication costs for 2009
- The shares within late-term care for muscle relaxants, such as Skelaxin and Cyclobenzaprine HCL,[7] are substantially lower than their overall shares for 2009

The specific medications given late-term provide a further indication for the shift in focus from treating the loss of function to relieving pain.

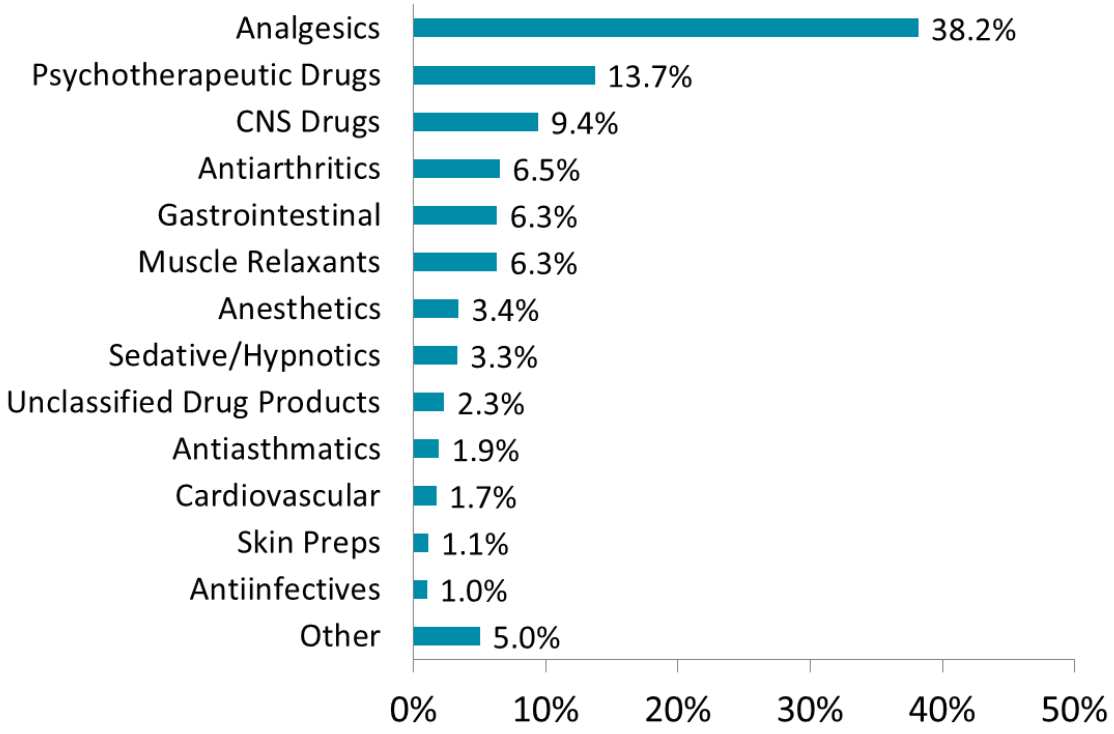
Exhibit 6: Shares of Drug Costs for the Top WC Drugs

Name of Drug	Share of Late-Term Care	Share of Service Year 2009
Drugs in the top 10 for **both** Service Year 2009 and for late-term care		
OxyContin	11.3%	6.1%
Lidoderm	3.8%	5.2%
Hydrocodone-Acetaminophen	2.0%	5.1%
Lyrica	3.0%	4.4%
Celebrex	3.8%	3.7%
Cymbalta	2.4%	2.7%
Drugs in the top 10 for late-term care but **not** for Service Year 2009		
Fentanyl	2.9%	1.8%
Percocet	2.3%	1.0%
Oxycodone HCL	2.0%	1.4%
Duragesic	1.9%	0.7%
Drugs in the top 10 for Service Year 2009 but **not** for late-term care		
Gabapentin	0.1%	3.4%
Skelaxin	0.3%	2.8%
Meloxicam	0.8%	2.3%
Cyclobenzaprine HCL	0.0%	2.3%

[7] Metaxalone, the active ingredient in Skelaxin, and Cyclobenzaprine are commonly used in conjunction with physical therapy.

Exhibit 7 itemizes late-term medication costs according to their general therapeutic use. Pain medication accounts for the largest portion of prescription costs to treat injuries more than 20 years old. In addition to painkillers, pain management uses drugs that target the central nervous system and were initially developed to treat psychiatric and neurological conditions. The psychotherapeutic drug, Cymbalta, is an example of such a drug.

Exhibit 7: Payment Shares for Late-Term Medication



The last two decades have seen a dramatic growth in pain management. Pain management was defined as a medical specialty in 1991, and the number of practitioners has skyrocketed—from 200 in 1990 to 7,000 in 2004 and 10,000 in 2011.[8] Opinions differ on the use of opiates for pain management. Those in favor believe that they are needed to block the development of pain pathways. Those who oppose their use in treating chronic pain argue that the risk of claimant addiction is too high. While few advocate the long-term use of opiates, Exhibit 6 shows a high reliance on controlled substances in late-term care. In this regard, the 2nd Edition of the American College of Occupational and Environmental Medicine (ACOEM) Practice Guidelines states: [9]

> Given the uncertainty regarding the balance between benefit and risk when opioids are used in the management of chronic non-malignant pain, and, in particular, in association with their use for chronic musculoskeletal pain, the use of opioids during the sub-acute and chronic phases of an injury, especially in the absence of an objectively identifiable pain generator, cannot be recommended.

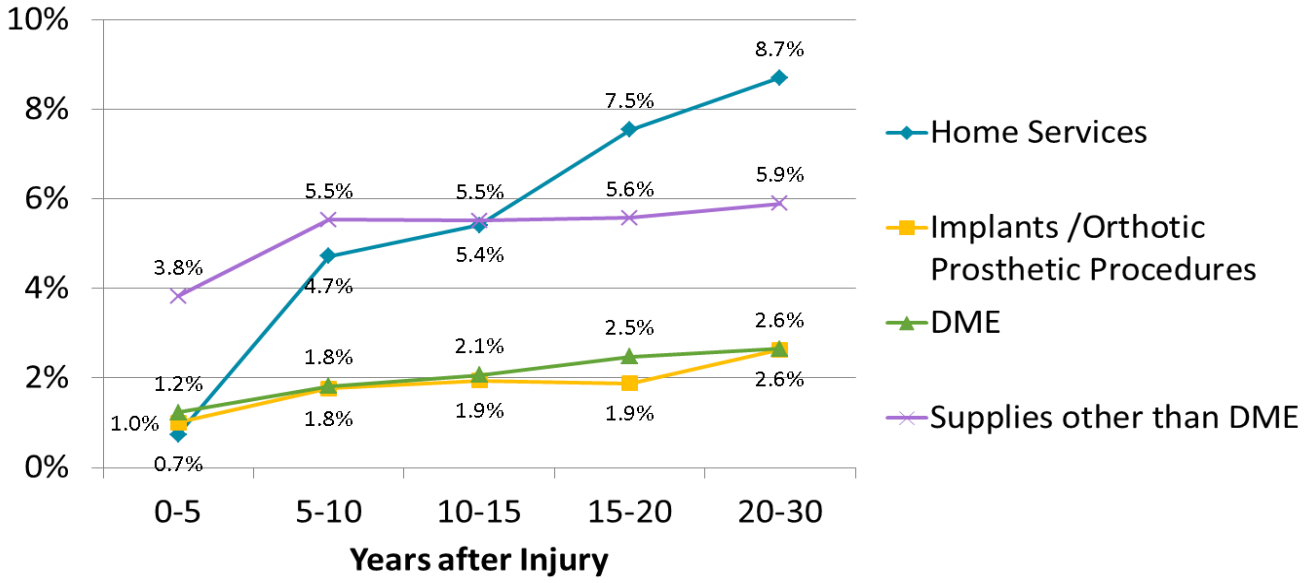
[8] Figures are from the presentation, "National Trends in Workers Compensation" by Dr. David Dietz, National Medical Director for Liberty Mutual Insurance. That discussion provides additional perspective and commentary on the utilization of pain management in WC. The presentation is at www.docstoc.com/docs/44542211/National-Trends-in-Workers-Compensation.

[9] Genovese, Harris, Korevaar, *ACOEM Practice Guidelines*, 2nd Ed., 2007.

Home Services, Implants/Orthotics, and Supplies

Home health services, implants/orthotics, and supplies are a greater share of costs for long-term care than for care provided within 20 years of injury. Exhibit 8 shows how those shares increase over 5-year intervals after injury, as well as the late-term-care decade from 20 to 30 years after injury. While the most dramatic increase is for home health services, each of the service categories show a pattern of steady payment share growth as claims age.

Exhibit 8: Payment Shares for Home Health Services, Orthopedic Devices and Supplies by Age of Claim



During the first five years of treatment, less than 1% of medical payments go for home health services; however, that percentage increases steadily to be near 9% for late-term care. While very preliminary, this suggests that this growth may continue well beyond 20 years. If so, home health services may account for more than 10% of the cost of WC medical coverage delivered decades post-injury. Since home health services have seen less upward pressure on prices than medical care generally, home-based treatment of chronic conditions may help contain WC costs.[10]

Exhibit 8 shows similar shares of payments for orthopedics and durable medical equipment. While each accounted for only about 1% of the payments over the first few years, that share more than doubled, accounting for about 2.6% of the cost of late-term care. Over the course of two decades of treatment, the share for supplies other than durable medical equipment increased by about half, from 4% for the first few years to 6% late-term.

As patients age, the efficacy of a medical procedure may diminish and this, in turn, contributes to the cost of late-term care. The case of knee replacement surgery is a good example. Replacement surgery is often not the first option in the event of a knee injury. Treatment may start with a less invasive approach, and it may be years after the injury before conditions warrant a replacement. This procedure is an example in which utilization is technologically driven:

- When introduced in the early 1970s, knee replacements were expected to last for 10 years
- Due to better materials, 85% of knee replacements now last 20 years
- Other improvements, like minimally invasive surgery, have made this treatment more popular, even among elderly patients—Medicare saw a 58% growth in the rate of knee replacements per enrollee from 2000 to 2006[11]

These factors push follow-up knee replacements into the late-term (post-20 year) time window.

[10] From 2005 to 2011, prices for home health services have grown at an annual rate of 2.1% compared with a rate of 3.7% for overall medical services, based on indices in the BLS "CPI Detailed Report, Data for December 2011," page 97: www.bls.gov/cpi/cpid1112.pdf.
[11] "Racial Disparities in Total Knee Replacements Among Medicare Enrollees—United States 2000–2006" in the Morbidity and Mortality Weekly Report for February 20, 2009, Vol. 58, No. 6, available at www.cdc.gov/mmwr/preview/mmwrhtml/mm5806a1.htm

Medication and supplies are also a comparatively predictable medical cost and they, too, account for a growing share as claims age. They are also identifiable via the MDC:

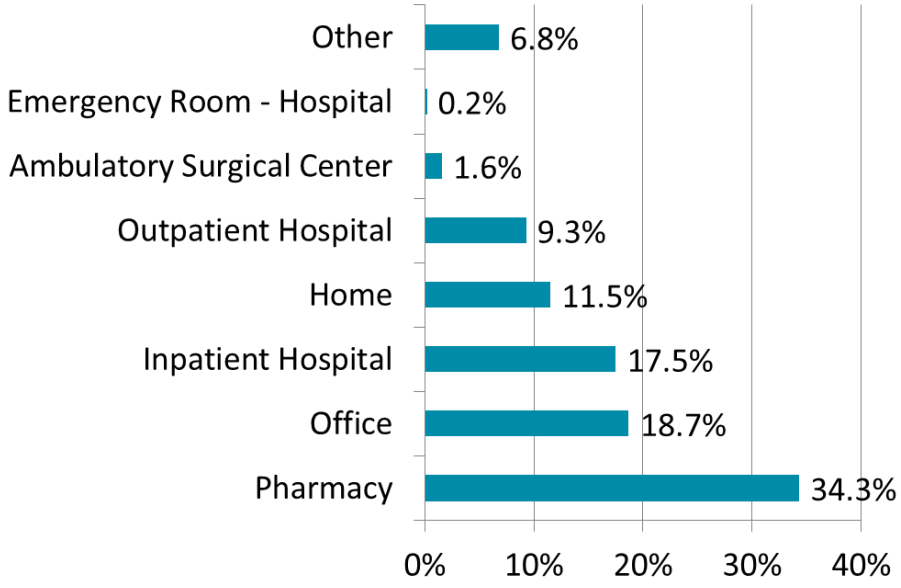
- Drugs are identified by a National Drug Code as to both active ingredients and strength
- Pain management has a limited focus and formulary, with the current year's scripts on a given WC case likely to be repeated in future years

Therefore, compared with medical care provided earlier in the life of a claim, a comparatively short case history may suffice to predict the contribution of medication and supplies toward late-term-care costs.

Late-Term Care by Place of Service

Exhibit 9 compares the cost of late-term-care services provided at the claimant's home relative to those provided in more traditional settings, such as doctors' offices and hospitals.[12] Most late-term medication is purchased at a pharmacy; drugs purchased by mail order are considered to be purchased at a pharmacy here. While emergency rooms account for only a very small share of late-term care, the share of costs for hospital-based care is more than double the share of costs for services provided at home.

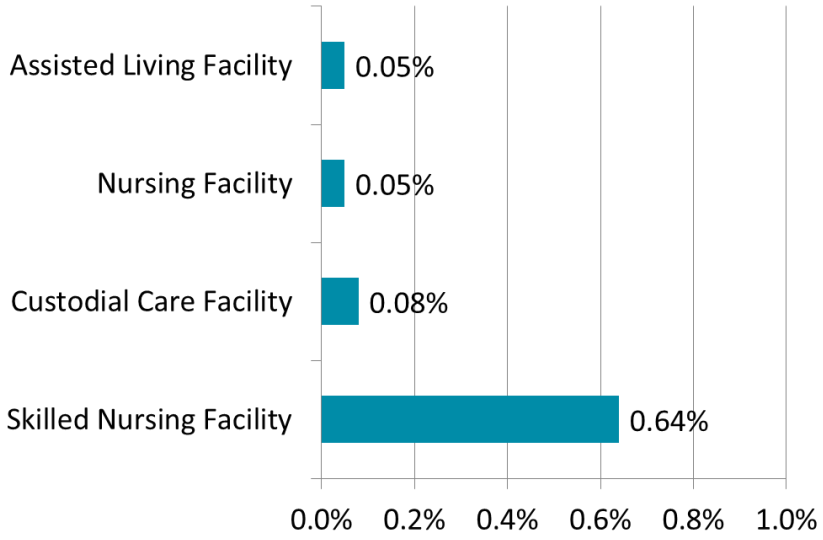
Exhibit 9: Late-Term Payment Share for Common Places of Service



[12] Exhibit 9 itemizes payments by their place of service rather than by the category of service classifications used in Exhibits 5 and 8. For example, the 11.5% of Exhibit 9 being greater than the 9% for the home health services category in those exhibits reflects the fact that not all services provided at home are classified as home health care (e.g., psychiatric visits, ambulance, physical therapy, oxygen therapy, and wheelchair parts). Similarly, not all prescription medication is purchased at a pharmacy; many of the services provided at an ASC are also provided at hospitals, and not all services provided in an ER would be classified as emergency medicine.

Exhibit 10 shows late-term payment shares to subacute care facilities. The small percentages billed by those facilities, combined with the high percentages billed by hospitals (see Exhibit 9), and the shift in focus from return of function to relief of symptoms, all combine to suggest that hospitals direct acute-care patients to continue treatment within a hospital-based subacute program, either as an inpatient or outpatient.

Exhibit 10: Late-Term Payment Share for Long-Term-Care Facilities



Conclusion

A few key findings from this study are that:

- Male claimants incur about three-fourths of the costs of WC late-term care, even though they represented less than 60% of the workforce at the time of injury
- Less than 40% of WC late-term-care claimants are younger than age 60, but this cohort incurs nearly half the cost of late-term care
- Drugs, home health services, orthotic devices, and supplies are a greater share of costs of services provided 20 to 30 years after injury than of services provided within 20 years of injury

This study is a "quick first look" at some types of analysis that can be gleaned from NCCI's new Medical Data Call. Applications will expand as more experience is captured into the Medical Data Call.

This study extends some previous NCCI research. The papers, "Medical Services by Size of Claim" [13,14] and "Gaining Perspective on the Relative Cost of Medical Services by Age of Claim and Accident Year," [15] relate the mix of medical services with claim severity and claim maturity through up to 12 years past the injury date. The paper, "Workers Compensation Prescription Drug Study: 2011 Update," [6] and others in the series of prescription drug studies show that prescription drug costs are an increasing share of workers compensation medical costs out to about 16 years after the injury. These and more NCCI research studies are at **ncci.com**.

[13] B. Lipton, G. Cooper, J. Robertson, "Medical Services by Size of Claim," NCCI Research Brief, Winter 2009, available at **ncci.com**.
[14] B. Lipton, K. Porter, Y. Bar-Chaim, J. Robertson, "Medical Services by Size of Claim—2011 Update," NCCI Research Brief, November 2011, available at **ncci.com**.
[15] J. Evans, J. Robertson, "Gaining Perspective on the Relative Cost of Medical Services by Age of Claim and Accident Year," NCCI Research Brief, July 2006, available at **ncci.com**.