



Thinking About an Aging Workforce—Potential Impact on Workers Compensation

The dramatic collapse in the stock market in 2001 substantially reduced the values of most investors' portfolios. Among those least able to recover are older workers who had looked to these portfolios to help fund their retirement. It now appears that many people will continue to work well beyond their originally planned retirement age.

This is reflected in the recent increase in labor force participation rates of workers over the age of 55. According to three surveys conducted by Gallup for UBS Financial Services, a greater number of people are planning to put off retirement until after age 62. In the 1998 survey, only 36% of respondents planned to wait to retire until after age 62. In the 2002 survey, the number of those saying they would wait increased to 47%, and in the 2004 survey, the number had grown again to 57% of respondents.¹

If workers put off their retirement and continue to work into their later years as the above suggests, what effect might that have on workplace injuries?

Research by NCCI and WCRI (Workers Compensation Research Institute),² among others, indicates that older workers typically have lower rates of workplace injuries but that their injuries result in higher average costs. However, there is little research that examines, in depth, the nature of claims costs for older workers, especially those in their late 50s and early 60s who have postponed retirement because of financial pressures to continue to work and to retain medical insurance.

This is likely to become more pronounced in the future. For example, starting in 2003, the age at which people become eligible for full retirement started to ratchet up, and if there are no changes to the current statutes, it will reach 67 in 2026.

In this research, NCCI examines the severity of indemnity and medical payments by age group for the top injuries in terms of both frequency and total loss costs. This will help stakeholders in the workers compensation system to better understand increased loss costs and to plan for a potentially significant increase in the number of older workers in the coming decades.

Outlook for an Aging Workforce

Looking at labor force participation rates³ by age group during the 1990s confirms that the participation by older workers has grown at a faster pace than for the population as a whole. This pattern was even more pronounced in the recession that began in 2000. During this period, the labor force participation of younger people declined. In contrast today, those approaching retirement age—as well as those over age 65—are continuing to work even as total labor force participation has fallen. Exhibit 1 illustrates the increase in labor force participation for those over age 65.

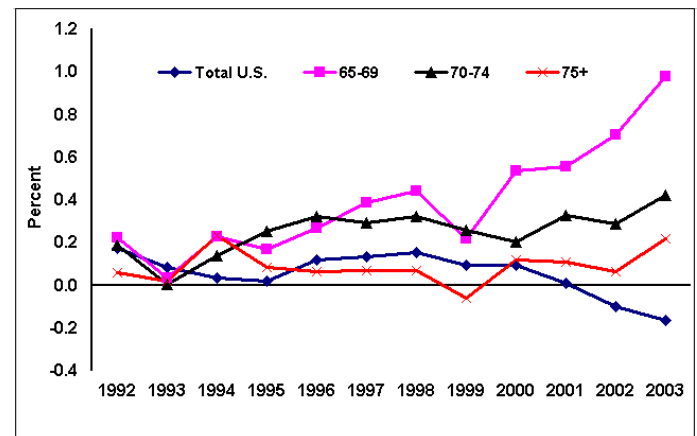


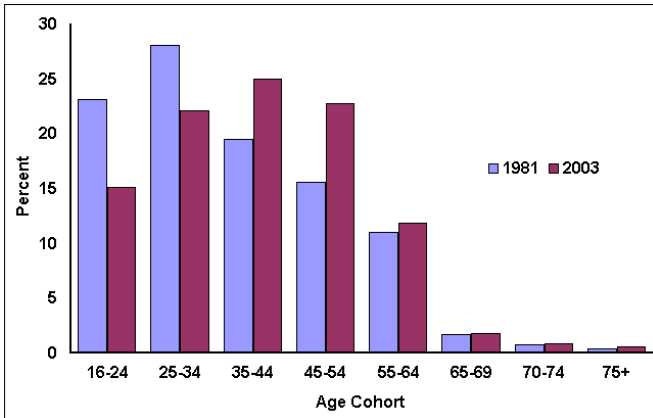
Exhibit 1. Five-Year Moving Average of Change in Labor Force Participation by Age Group

¹ "Growing Numbers of Americans Push Back Retirement Dates," Glenn Ruffenach, *The Wall Street Journal*, October 20, 2004, p. D10.

² "Graying of the Workforce: Implications for Workers Comp," Harry Shuford, *Claims*, January 2002, and "Workers' Compensation and the Changing Age of the Workforce," Douglas Tattrie, Glenn Gotz, Te-Chun Liu, Workers Compensation Research Institute, December 2000.

³ The labor force participation rate is defined as the ratio of the civilian labor force to the total noninstitutionalized civilian population 16 years of age and over. Here we look at it by age group so it measures the proportion of the population in each age group that is willing and able to work and is either employed or actively seeking employment.

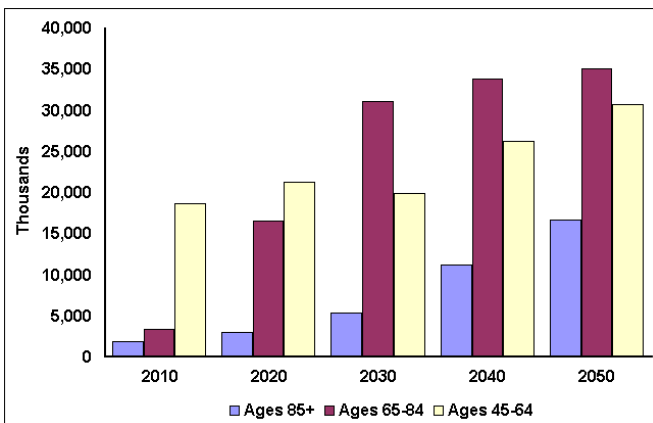
Even with this increased participation in the labor force, workers over 65 remain less than 5% of the labor force. Exhibit 2 shows that an aging workforce does not appear to pose an immediate problem for the workers compensation system. However, with significant increases forecasted in the older population, and increases in their labor force participation, the share of workers over 65 is likely to increase over the next 25 years.



Source: Bureau of Labor Statistics

Exhibit 2. Share of the Labor Force by Age Group

Exhibit 3 shows the significant increase expected in the population aged 65–84 through 2030. As will be shown in subsequent sections, this projected growth in the share of the labor force poses a potential challenge for workers compensation systems.



Source: US Census Bureau

Exhibit 3. Cumulative Change in Population by Age Groups, 2000–2050

Severity Increases With Age

Based on the data underlying this study,⁴ severity typically rises with age (see Exhibit 4). Medical severity for all lost-time claims increases for each age group. Indemnity increases with every age group up to age 65, at which point it declines. This is likely due to social

security offsets and lower average weekly wages for those 65 and older (see Exhibit 5). Medical severity is higher than indemnity severity for the youngest age group. Indemnity then surpasses medical for ages 25–64, before falling to slightly below medical for the 65-and-over age bracket.

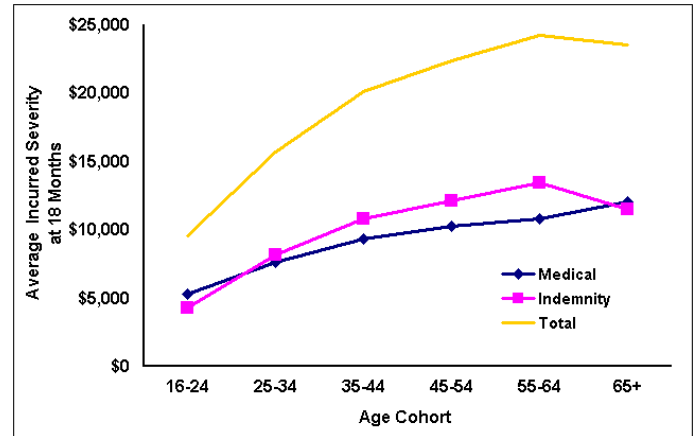


Exhibit 4. Average Incurred Severity at 18 Months for All Lost-Time Claims

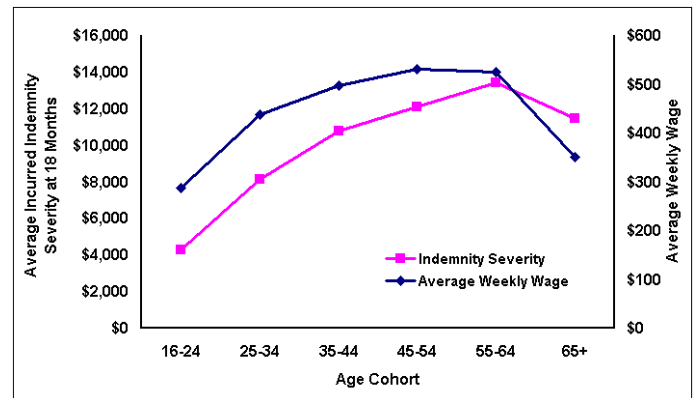


Exhibit 5. Average Incurred Indemnity Severity at 18 Months and Average Weekly Wages for All Lost-Time Claims

Exhibits 6 and 7 (on next page) show medical and indemnity severity by age category for the top 10 lost-time diagnosis codes based on frequency.⁵ Medical severity increases for all age groups for carpal tunnel syndrome and sprain of lumbar region, but for other diagnoses, medical severity peaks at earlier age groups. For example, medical severity for both lumbar disc displacement and cervicgia peaks in the 45–54 age group while medical severity for lumbago and neck sprain peaks with the 55–64 age bracket. Indemnity severity tends to rise fairly consistently from age 16 to 64 for the top 10 diagnosis codes, but it falls for the 65-and-over age group. Sprain of lumbar region and lumbago are the exceptions that rise for the 65-and-over age cohort.

⁴ Based on data licensed to NCCI by insurers for purposes of this study covering losses reported from more than 4.6 million claims over the five years from 1996–2000.

⁵ The glossary contains descriptions of the diagnosis codes included in the graphs and tables in this report.

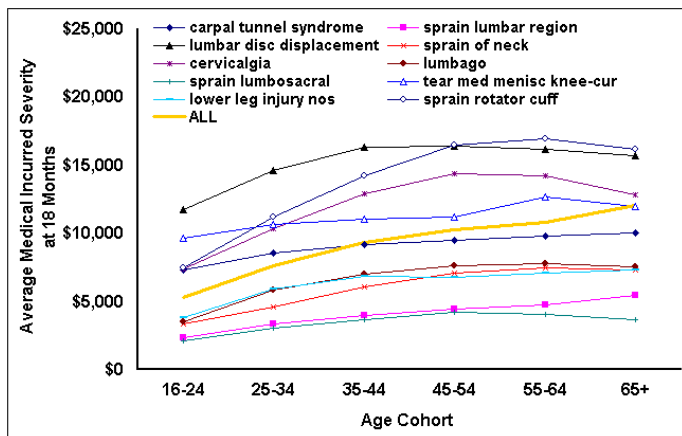


Exhibit 6. Average Medical Incurred Severity at 18 Months for the Top 10 Lost-Time Diagnosis Codes Based on Frequency

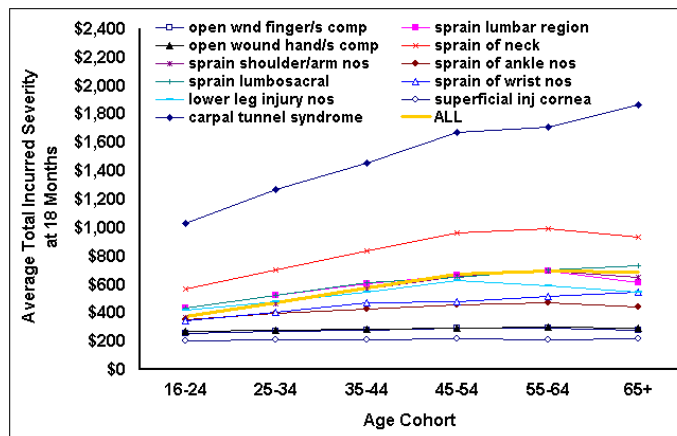


Exhibit 8. Average Total Incurred Severity at 18 months for the Top 10 Medical-Only Diagnosis Codes Based on Frequency Plus CTS

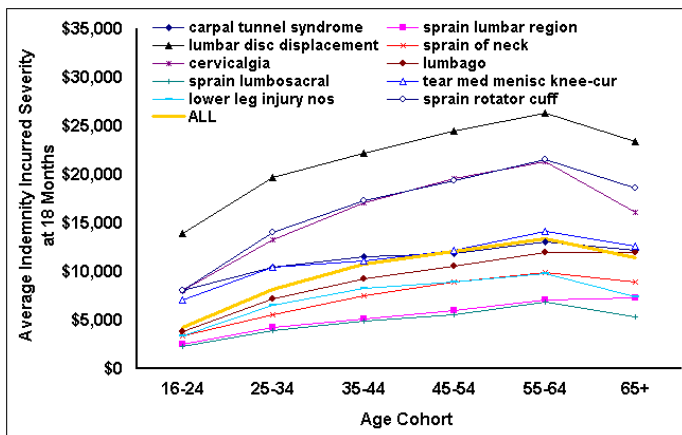


Exhibit 7. Average Indemnity Incurred Severity at 18 Months for the Top 10 Lost-Time Diagnosis Codes Based on Frequency

Exhibit 8 shows the severity of the top medical-only claims (plus carpal tunnel syndrome) ranked by frequency.⁶ Overall, the severity of all medical-only claims increases with each age group until age 65 and older, when there is a very small decline. Most of the top medical-only diagnosis codes also follow this pattern, peaking for the 55–64 age bracket. Exceptions are carpal tunnel syndrome, which has a significant increase in the severity of medical-only claims for the 65-and-over age group, and sprain of lumbosacral and sprain of wrist that also rise with every age category. The severity of lower leg injury medical-only claims is also an exception in that it peaks for the 45–54 age group.

Top Injury Types Vary With Age

Exhibits 9 and 10 examine the top 10 diagnosis codes for medical-only and lost-time claims for all ages. The charts show how the top 10 codes rank for each age group. For medical-only claims, the top two diagnoses (open wounds of the fingers and sprain of lumbar region) are consistent among all age categories. Others change more dramatically. For example, sprain of neck ranks 6th overall but ranges from 11th for those aged 16–24 to 3rd for those aged 35–54. Sprain of neck is above average for severity (\$770 vs. \$520 for all medical-only claims). Ankle sprains rank 4th overall but fall from 4th for those aged 16–34 to 14th for those aged 65 and older. Ankle sprains are below average in terms of medical-only claim severity (\$400 vs. \$520).

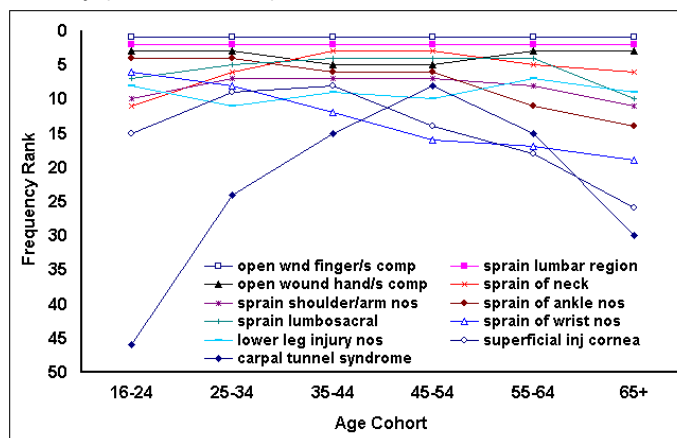


Exhibit 9. Medical-Only Claims Frequency Rank by Age for the Top 10 Diagnosis Codes Plus CTS

⁶ Carpal tunnel syndrome is also included even though it is not among the top 10 medical-only diagnoses ranked by frequency. This injury is included because it is a high-cost injury and because carpal tunnel claimants are more likely to be older.

Exhibit 10 is similar, but it takes into account the rankings of the top diagnosis codes for lost-time claims. The chart indicates that there is more variation in the top lost-time claim diagnoses by age category. Three of the top 10 injuries that become more prevalent with age include carpal tunnel syndrome, tear of medial cartilage or meniscus of the knee, and sprain of rotator cuff—and the severities for these diagnoses are above average.

The total severity at 18 months for all lost-time claims included in this study is \$18,500, but for carpal tunnel it is \$20,400, for the knee injury it is \$22,500, and for sprain of rotator cuff it is \$32,600. On the other hand, sprain of the lumbosacral, a much less severe injury with total severity of lost-time claims of \$7,800, becomes less prevalent with age.⁷

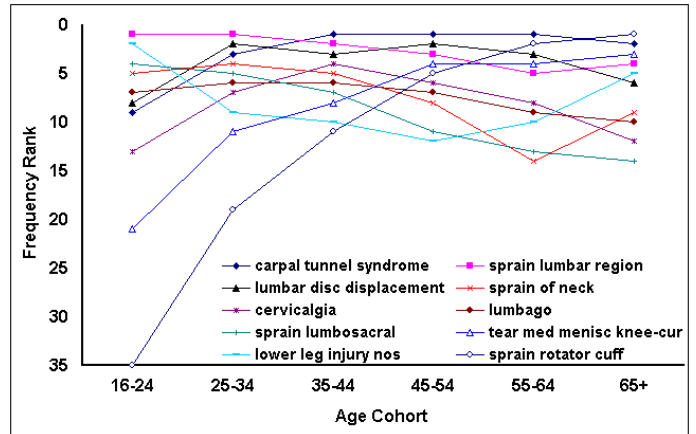


Exhibit 10. Lost-Time Frequency Ranks by Age for the Top 10 Diagnosis Codes

Rotator Cuff Injuries

This section examines rotator cuff injuries in more detail, looking at all claims instead of just the lost-time claims examined above. The top two diagnosis codes (based on frequency) are the same for the 65 and over age bracket and for all ages when considering all claims. However, sprain of rotator cuff is ranked 3rd for those 65 and over versus 28th for all ages, and its severity is much greater than average (see Exhibit 11).⁸

Top Two Places Are the Same for 65+ and All Ages—Sprain Rotator Cuff Is 3rd for 65+ and Is Above Average for Severity

All Claims	Rank by Claim Counts		Average Incurred \$ at 18 Months	
	65+	All Ages	65+	All Ages
Open Wnd Finger/s Comp	1	1	400	350
Sprain Lumbar Region	2	2	4,360	2,480
Sprain Rotator Cuff	3	28	28,360	21,910
Sprain of Neck	4	4	6,230	3,930
Lower Leg Injury Nos	5	8	6,040	4,240
Open Wound Hand/s Comp	6	6	650	410
Contusion of Knee	7	19	2,000	1,050
Sprain Lumbosacral	8	3	3,400	2,430
Carpal Tunnel Syndrome	9	7	15,790	12,180
Contusion Face/Scalp/Nck	10	21	1,350	690
All			8,930	4,850

Exhibit 11. Rotator Cuff Sprains Rank High for 65+

⁷ These numbers are based on the claims data used in this analysis. The intent is to show relative positions, but the actual numbers will change depending on the data set used.

⁸ Rankings are based on claims with a clear diagnosis.

Exhibit 12 shows that the claim count ranking of rotator cuff sprains increases with each age group.

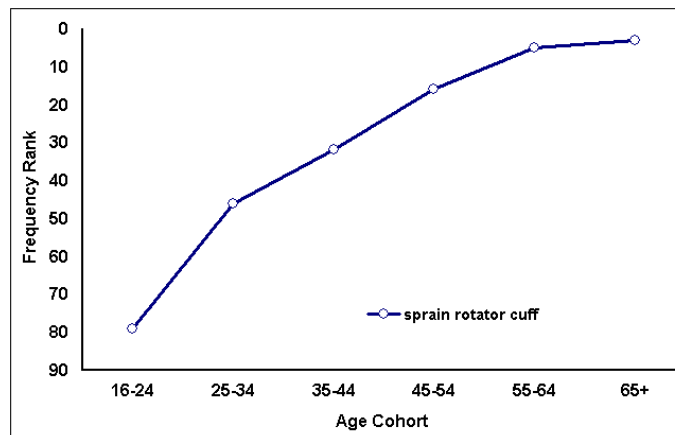


Exhibit 12. Claim Count Ranking for Rotator Cuff Sprains (All Claims)

When determining total incurred dollars of all claims at 18 months, sprain of rotator cuff ranks 1st for those aged 65 and over and 4th for all ages (see Exhibit 13).

	Rank by Total Incurred		Total Incurred \$ at 18 months		Average Incurred \$ at 18 months	
	65 & over	All ages	65 & over	All ages	65 & over	All ages
All Claims						
Sprain Rotator Cuff	1	4	25,211,350	659,039,230	28,360	21,910
Lumbar Disc Displacement	2	1	11,224,940	1,391,478,750	31,530	29,700
Oth Brain Inj-Loc Nos	3	14	11,208,060	353,783,260	47,090	24,730
Carpal Tunnel Syndrome	4	2	9,395,270	965,530,030	15,790	12,180
Tear Med Menisc Knee-Cur	5	6	9,035,960	515,023,020	21,060	18,220
Rotator Cuff Synd Nos	6	9	8,059,680	437,360,990	18,920	14,670
Fx Neck of Femur Nos-CI	7	88	7,903,230	34,369,100	49,710	36,520
Lumbosacral Neuritis Nos	8	5	6,878,850	649,598,070	23,010	24,080
Cervicalgia	9	3	6,820,950	737,014,250	15,860	15,760
Lumb/Lumbosac Disc Degen	10	10	6,592,010	415,879,920	29,170	26,500
All	—	—	400,438,650	22,200,386,430	8,930	4,850

Exhibit 13. Rankings by Total Incurred Dollars at 18 Months for the Top 10 Diagnosis Codes for the 65-and-Over Age Cohort

⁷ These numbers are based on the claims data used in this analysis. The intent is to show relative positions, but the actual numbers will change depending on the data set used.

⁸ Rankings are based on claims with a clear diagnosis.

Total Incurred Claims Costs

The impact of claims on total loss costs reflects the combined impact of frequency and severity of claims costs. The exhibit below shows the impact of major claim diagnosis categories on total loss costs by age group. It includes data for both medical-only and lost-time claims.

Diagnosis	Total of All Ages			16–24		25–34	
	Incurred (\$M) at 18 Months	Rank by Incurred \$ at 18 Months	% of Incurred \$	Rank by Incurred \$ at 18 Months	% of Incurred \$	Rank by Incurred \$ at 18 Months	% of Incurred \$
All	22,200	–	100.0	–	100.0	–	100.0
Lumbar Disc Displacement	1,391	1	6.3	1	4.3	1	7.0
Carpal Tunnel Syndrome	966	2	4.3	3	2.4	2	4.0
Cervicalgia	737	3	3.3	6	2.0	3	3.1
Sprain Rotator Cuff	659	4	3.0	17	0.9	14	1.5
Lumbosacral Neuritis Nos	650	5	2.9	7	1.9	4	3.0
Tear Med Menisc Knee-Cur	515	6	2.3	10	1.5	7	1.9
Cerv Disc Displacement	475	7	2.1	25	0.7	10	1.8
Sprain Lumbar Region	446	8	2.0	2	2.8	5	2.5
Rotator Cuff Synd Nos	437	9	2.0	21	0.8	15	1.4
Lumb/Lumbosac Disc Degen	416	10	1.9	18	0.9	13	1.7

Exhibit 14a. Rankings by Total Incurred Dollars at 18 Months for the Top 10 Diagnosis Codes for All Ages

Diagnosis	35–44		45–54		55–64		65+	
	Rank by Incurred \$ at 18 Months	% of Incurred \$	Rank by Incurred \$ at 18 Months	% of Incurred \$	Rank by Incurred \$ at 18 Months	% of Incurred \$	Rank by Incurred \$ at 18 Months	% of Incurred \$
All	–	100.0	–	100.0	–	100.0	–	100.0
Lumbar Disc Displacement	1	7.2	1	6.0	2	4.9	2	2.8
Carpal Tunnel Syndrome	2	4.6	2	5.1	3	4.4	4	2.3
Cervicalgia	3	3.8	4	3.7	6	2.7	9	1.7
Sprain Rotator Cuff	6	2.4	3	4.1	1	6.0	1	6.3
Lumbosacral Neuritis Nos	4	3.1	5	3.0	5	2.9	8	1.7
Tear Med Menisc Knee-Cur	7	2.2	6	2.7	4	3.1	5	2.3
Cerv Disc Displacement	5	2.7	7	2.6	10	1.6	22	0.6
Sprain Lumbar Region	11	2.0	12	1.6	12	1.4	16	1.1
Rotator Cuff Synd Nos	9	2.0	8	2.5	7	2.5	6	2.0
Lumb/Lumbosac Disc Degen	8	2.1	9	2.0	8	2.0	10	1.6

Exhibit 14b. Rankings by Total Incurred Dollars at 18 Months for the Top 10 Diagnosis Codes for All Ages

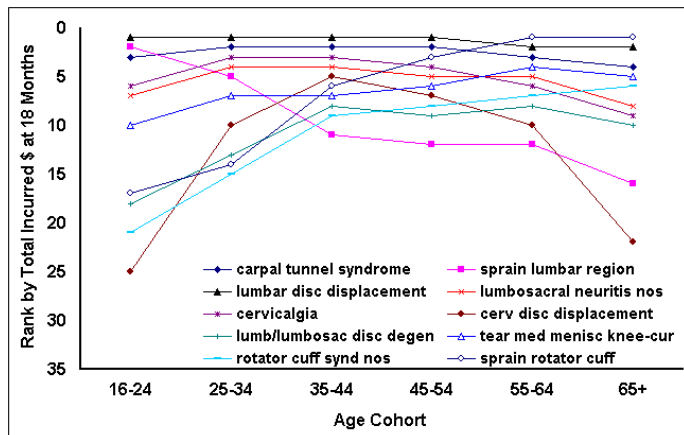


Exhibit 15. Rankings by Total Incurred Dollars at 18 Months for the Top 10 Diagnosis Codes for All Ages

Exhibits 14 and 15 show that lumbar disc displacement and carpal tunnel syndrome are among the top diagnosis codes ranked by total incurred dollars at 18 months for all age groups, although the ranking declines slightly with age. The ranking of sprain of lumbar region significantly declines with age, starting at 2nd for the 16–24 age cohort and falling out of the top 10 to 16th for ages 65 and over. The rankings for both cervicalgia and lumbosacral neuritis peak for the 25–44 age groups and then decline. However, both remain in the top 10 in terms of total incurred dollars at 18 months. Cervical disc displacement is in the top 10 for the 25–64 age groups but not for the youngest and oldest workers. Finally, the rankings for sprain rotator cuff and rotator cuff syndrome both rise with age, peaking for the oldest age groups.

Conclusion

The aging of the workforce will become an important issue for the workers compensation market over the next couple of decades. With the population of older people increasing and their labor force participation rate rising, older workers will become a larger share of the workforce.

As we have seen here, overall medical severity of lost-time claims tends to rise for all age groups. Indemnity severity rises for all ages until age 65, when it falls due to social security offsets and lower average weekly wages. However, the top injuries differ by age group, with more severe injuries entering the top 10 for those aged 65 and older.

Glossary of Diagnosis Codes⁹

Carpal tunnel syndrome—Carpal tunnel syndrome including median nerve entrapment and partial thenar atrophy.

Cerv disc displacement—Displacement of cervical intervertebral disc without myelopathy. Includes neuritis (brachial) or radiculitis due to displacement or rupture of cervical intervertebral disc.

Cervicalgia—Pain in neck.

Contusion Face/Scalp/Nck—Bruise of face, scalp, and neck except eye(s). Includes cheek, ear, gum, lip, mandibular joint area, nose, and throat.

Contusion of Knee—Bruise of knee.

Fx neck of femur nos-cl—Fracture of unspecified part of neck of femur, closed, including hip nos.¹⁰

Lower leg injury nos—An unspecified injury of the knee, leg, ankle, or foot.

Lumbago—Low back pain, low back syndrome, lumbalgia.

Lumbar disc displacement—Displacement of lumbar intervertebral disc without myelopathy. Includes lumbago or sciatica due to displacement of intervertebral disc and neuritis or radiculitis due to displacement or rupture of lumbar intervertebral disc.

Lumb/lumbosac disc degen—Degeneration of lumbar or lumbosacral intervertebral disc.

Lumbosacral neuritis nos—Thoracic or lumbosacral neuritis or radiculitis, unspecified, including radicular syndrome of lower limbs.

Open wnd finger/s comp—Open wound of a finger or fingers, including fingernails, thumb, and thumbnail, without mention of complication.

Open wound hand/s comp—Open wound of hand except finger(s) alone without mention of complication.

Oth brain inj-loc nos—Intracranial injury of an other and unspecified nature including injury to the brain nos, cavernous sinus, or intracranial, without mention of an open intracranial wound.

Rotator cuff synd nos—Disorders of bursae and tendons in the shoulder region, unspecified, including rotator cuff syndrome nos and supraspinatus syndrome nos.

Sprain lumbar region—Sprain or strain of lumbar region of the back.

Sprain lumbosacral—Sprain or strain of a joint or ligament in the lumbosacral region.

Sprain of ankle nos—Sprain or strain of an unspecified site on the ankle.

Sprain of neck—Sprain or strain of neck region of the back including anterior longitudinal (ligament), cervical; atlanto-axial (joints); atlanto-occipital (joints); and whiplash injury.

Sprain of wrist nos—Sprain or strain of an unspecified site on the wrist.

Sprain rotator cuff—Sprain or strain of rotator cuff, excluding a complete rupture.

Sprain shoulder/arm nos—Sprain or strain of unspecified site of shoulder and upper arm.

Superficial inj cornea—Superficial injury of the cornea including corneal abrasion and superficial laceration. Excludes corneal injury due to contact lens.

Tear med menisc knee-cur—Tear of medial cartilage or meniscus of knee, current.

© 2005 National Council on Compensation Insurance Inc. All Rights Reserved.

THE RESEARCH ARTICLES AND CONTENT DISTRIBUTED BY NCCI ARE PROVIDED FOR GENERAL INFORMATIONAL PURPOSES ONLY AND ARE PROVIDED "AS IS." NCCI DOES NOT GUARANTEE THEIR ACCURACY OR COMPLETENESS NOR DOES NCCI ASSUME ANY LIABILITY THAT MAY RESULT IN YOUR RELIANCE UPON SUCH INFORMATION. NCCI EXPRESSLY DISCLAIMS ANY AND ALL WARRANTIES OF ANY KIND INCLUDING ALL EXPRESS, STATUTORY AND IMPLIED WARRANTIES INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

⁹ Source: icd9cm.chrisendres.com.

¹⁰ Nos = not otherwise specified