Workers' compensation: What about frequency?

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Agenda

- Trend considerations, including frequency
- What is trend?
- Exposure
- Loss
- Resources
- Methodologies

What is trend?

- Trendy:
  - *Adjective* — of or in accord with the latest fashion or fad
  - *Noun* — one who is drawn to and represents the latest trends
- Trend:
  - *Noun* — the general direction in which something tends to move

Exposure

- Definition of exposure:

  "A unit of measure, which represents the extent of risk."

- Factors affecting exposure base selection:

1. Correlates with loss
2. Ease of determination
3. Responsiveness to change

Exposure units

- No inherent trend
- Wage-level trend
- Wage level and rate
- Other indices

Exposure units — no inherent trend

- Man hours
- Full-time equivalents
- Head count

Exposure units — wage-level trend

- Payroll

- Considerations:
  - Classification mix
  - Limited versus unlimited

Exposure units — wage level and rate

- Premium
- Considerations:
  - Pricing

Exposure units — other indices

- Sales
- Lost-time injuries

Loss

- Frequency — number of claims per exposure
- Severity — average cost per claim

Severity

Ways to segregate:

- Indemnity, medical, expense
- Injury type:
  - Fatal
  - PTD
  - PPD
  - TTD
  - Med only

Severity — indemnity, medical and expense drivers

- Indemnity:
  - Wage
  - Reforms
- Medical:
  - Underlying medical inflation
  - Reforms
- Expense:
  - Attorney fees
  - Reforms
  - Other lines of business (attorney concentration)

Frequency

Drivers:

- Safety and loss control
- Legislation
- Economic conditions
- Class of business

Example — no frequency trend

Determination of loss per payroll for BF method

Accident Year	Ultimate Loss	Benefit Level Trend	Loss Trend	Trended Ultimate Loss	Trended Payroll	Loss per Payroll
2000	7,000	1.035	1.493	10,817	163,190	0.066
2001	6,500	1.030	1.408	9,427	178,100	0.053
2002	7,250	1.025	1.329	9,872	189,400	0.052
2003	7,000	1.019	1.254	8,945	176,800	0.051
2004	6,000	1.016	1.184	7,219	181,300	0.040
2005	5,000	1.013	1.119	5,667	179,700	0.032
2006	4,500	1.010	1.058	4,806	176,700	0.027
					All Yr Wtd	0.046
					5 Yr Wtd	0.040
					2004 & prior	0.052
					Selection	**0.046**

Frequency trend

Loss time injuries per 100,000 workers

Source: Bureau of Labor Statistics (BLS)

Total recordable cases:

- 1997: 7.1
- 2007: 4.2

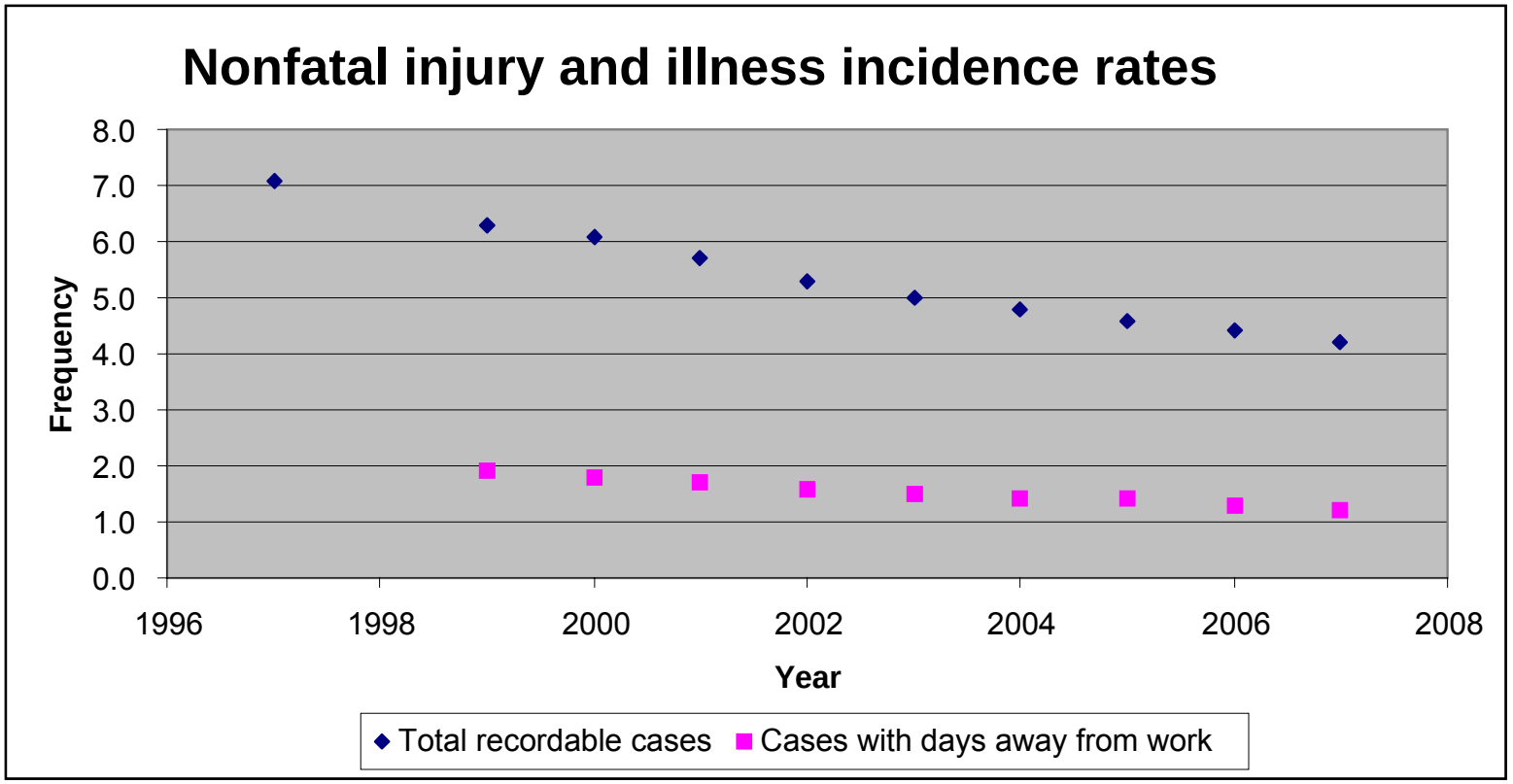
Average annual change: -5.1%

Total cases with days away from work:

- 1999: 1.9
- 2007: 1.2

Average annual change: -5.6%

Frequency trend — BLS



Example — countrywide frequency trend

Determination of loss per payroll for BF method

Accident Year	Trended Ultimate Loss (No Freq Consideration)	Frequency Trend	Trended Ultimate Loss	Trended Payroll	Loss per Payroll
2000	10,817	0.751	8,129	163,190	0.050
2001	9,427	0.783	7,379	178,100	0.041
2002	9,872	0.815	8,050	189,400	0.043
2003	8,945	0.849	7,597	176,800	0.043
2004	7,219	0.885	6,387	181,300	0.035
2005	5,667	0.922	5,223	179,700	0.029
2006	4,806	0.960	4,614	176,700	0.026
				All Yr Wtd	0.038
				5 Yr Wtd	0.035
				2004 & prior	0.042
				Selection	**0.038**

Major state reforms — California

- Legislation
- Experience
- Drivers

Indemnity claim frequency trend by accident year:

- 2004: -17.3%
- 2005: -17.1%
- 2006: -16.6%

Source: 2009 Legislative Cost Monitoring Report (WCIRB California)

(continued)

Major state reforms — Florida

- Legislation reforms
- Experience
- Drivers

- Lost-time claim frequency:
  - 2006: -12.4%
  - 2007: -13.2%

Source: NCCI Press Release

Example — major reform state frequency trend

Determination of loss per payroll for BF method

Accident Year	Trended Ultimate Loss (No Freq Consideration)	Frequency Trend	Trended Ultimate Loss	Trended Payroll	Loss per Payroll
2000	10,817	0.478	5,174	163,190	0.032
2001	9,427	0.531	5,010	178,100	0.028
2002	9,872	0.590	5,830	189,400	0.031
2003	8,945	0.656	5,869	176,800	0.033
2004	7,219	0.729	5,263	181,300	0.029
2005	5,667	0.810	4,590	179,700	0.026
2006	4,806	0.900	4,326	176,700	0.024
				All Yr Wtd	0.029
				5 Yr Wtd	0.029
				2004 & prior	0.031
				Selection	**0.029**

Example – summary

Loss per Payroll

Accident Year	No Frequency	Countrywide Frequency	Major Reform State Frequency
2000	0.066	0.050	0.032
2001	0.053	0.041	0.028
2002	0.052	0.043	0.031
2003	0.051	0.043	0.033
2004	0.040	0.035	0.029
2005	0.032	0.029	0.026
2006	0.027	0.026	0.024
All Yr Wtd	0.046	0.038	0.029
5 Yr Wtd	0.040	0.035	0.029
2004 & prior	0.052	0.042	0.031
Selection	**0.046**	**0.038**	**0.029**

Resources

- Masterson
- Consumer Price Index
- US DOL/BLS
- Insurance Information Institute
- Workers' Compensation Research Institute
- NCCI (Stat Bulletin)
- Independent rating organizations
- Commercial publications:
  - Conning
  - Workers' Compensation Reporter (LRP Publication)
  - Law firms
- Others

Resources — Masterson (1968)

Discussion comment:

"Mr. Masterson has made a valuable contribution to the insurance industry by presenting this paper. However, it's primary value will be as a stimulant to further advances in the measurement of the effect of economic factors, rather than the specific indexes presented. Unless the indexes are improved through study, the value of the contribution will soon be lost."

Resources — Consumer Price Index

What consumers spend on medical services, including:

- Prescription and non-prescription drugs
- Non-prescription medical supplies
- Hospital services
- Physician services
- Dental services
- Health Insurance

Resources — Bureau of Labor Statistics

- Available by state
- Available by SIC code
- Special extracts available upon request
- Requires care to select proper table

Resources — Workers' Compensation Research Institute

- Uses multiple resources, not just the insurance industry
- Much of its research is based upon limited sampling
- Read the qualifications

Economic effects — frequency

Recession – schools of thought:

- Increase – workers' compensation may be seen as preferable to unemployment benefits
- Decrease – workforce shifts to more seasoned workers, who have fewer injuries due to on the job experience

Economic effects — severity

- Extended duration
  - Failure of return to work programs
- Re-openings
  - Injuries from prior periods “flare up”