Medical Professional Liability Outlook and Economic Impacts of the Changing Healthcare Environment

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Presentation Outline

- The US Healthcare System & the Economy
- Employment/Professional Trends in Healthcare
- Medical Professional Liability: Performance Overview & Outlook
- The Affordable Care Act: Potential Impacts on MPL
- Overall P/C Insurance Industry Performance
- Investment Overview & Outlook
- Tort Trends
- Cyber Risk and the Healthcare Industry
- Q&A
From 1965 through 2013, US health care expenditures had increased by 69 fold. Population growth over the same period increased by a factor of just 1.6. By 2022, health spending will have increased 119 fold.

U.S. health care expenditures have been on a relentless climb for most of the past half century, far outstripping population growth, inflation of GDP growth.

Health care expenditures as a share of GDP rose from 5.8% in 1965 to 18.0% in 2013 and are expected to reach 19.9% of GDP by 2022.

Since 2009, health expenditures as a % of GDP have flattened out at about 18%--the question is why and will it last?

Medical Cost Inflation vs. Overall CPI, 1995 – 2014*

Though moderating, medical inflation will continue to exceed inflation in the overall economy.

Average Annual Growth Average
1995 – 2013
Healthcare: 3.8%
Total Nonfarm: 2.4%

*July 2014 compared to July 2013.
Accelerating business investment will be a potent driver of commercial property and liability insurance exposures and should drive employment and WC payroll exposures as well (with a lag).

Source: Insurance Information Institute research.

1965: 194.3 Mill
2013: 317.0 Mill

1965: $719.1 Bill
2013: $16,797.5 Bill

1965: $42.0 Bill
2013: $2,914.7 Bill
Employment Trends in the Healthcare Industry

Employment Will Grow but Skills, Responsibilities and Risks Will Evolve
Healthcare employment has continued to grow in good times and bad - including the Great Recession.

Occupations Ranked by Projected Percentage Growth, 2012-2022F

Healthcare Support: 28.1%
Healthcare Practitioners: 21.5%
Construction: 21.4%
Personal Care and Service: 20.9%
Computer and Math: 18%
Social Service: 17.2%
Business & Financial: 12.5%
Groundskeeping/Janitorial: 12.5%
Education: 11.1%
All Occupations: 10.8%
Legal: 10.7%
Life, Phys and Social Science: 10.1%
Repair: 9.6%
Food Preparation: 9.4%
Transportation: 8.6%
Fire, Police, Etc.: 7.9%
Architects and Engineers: 7.3%
Sales: 7.3%
Management: 7.2%
Arts and Media: 7%
Administrative Support: 6.8%
Production: 0.8%
Farming: 3.4%

Healthcare professions are expected to grow at 2 to nearly 3 times employment growth overall.

Growth in Healthcare Profession by Skill Level, 2012 – 2022F

(Thousands of Jobs)

- Practitioners, including RNs: 5,005 (2012) to 6,020 (2022), +1.015 Million, +20.3%
- Technicians, including LPNs: 2,893 (2012) to 3,590 (2022), +697,000, +24.1%
- Aides: 2,492 (2012) to 3,242 (2022), +750,000, +30.1%
- Other: 1,771 (2012) to 2,196 (2022), +425,000, +24.0%

Demand for physicians is expected to outstrip supply through 2020 by a wide margin.

Source: American Association of Medical Colleges [https://www.aamc.org/advocacy/campaigns_and_coalitions/fixdocshortage/]; Insurance Information Institute.
A potential large and growing shortage of physicians looms. Estimates suggest a shortage of 91,500 physicians by 2020—a gap 12% gap.

Will this be a negative for MPL?

Source: American Association of Medical Colleges [https://www.aamc.org/advocacy/campaigns_and_coalitions/fixdocshortage/]; Insurance Information Institute.
Physician Supply and Demand, 2008–2020

<table>
<thead>
<tr>
<th>Year</th>
<th>Physician Supply (All Specialties)</th>
<th>Physician Demand (All Specialties)</th>
<th>Physician Shortage (All Specialties*)</th>
<th>Physician Shortage (Non-Primary Care Specialties)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>699,100</td>
<td>706,500</td>
<td>7,400</td>
<td>None</td>
</tr>
<tr>
<td>2010</td>
<td>709,700</td>
<td>723,400</td>
<td>13,700</td>
<td>4,700</td>
</tr>
<tr>
<td>2015</td>
<td>735,600</td>
<td>798,500</td>
<td>62,900</td>
<td>33,100</td>
</tr>
<tr>
<td>2020</td>
<td>759,800</td>
<td>851,300</td>
<td>91,500</td>
<td>46,100</td>
</tr>
<tr>
<td>2025</td>
<td>785,400</td>
<td>916,000</td>
<td>130,600</td>
<td>64,800</td>
</tr>
</tbody>
</table>

A potential large and growing physician gap looms over the next decade, with potential negative impacts on MPL.

12 Industries for the Next 10 Years: Insurance Solutions Needed

- Health Care
- Health Sciences
- Energy (Traditional)
- Alternative Energy
- Petrochemical
- Agriculture
- Natural Resources
- Technology (incl. Biotechnology)
- Light Manufacturing
- Insourced Manufacturing
- Export-Oriented Industries
- Shipping (Rail, Marine, Trucking, Pipelines)

Many industries are poised for growth, though insurers’ ability to capitalize on these industries varies widely.
Medical Professional Liability

Performance Overview
Medical Professional Liability: 4 Major Challenges

- **Increasing Competition**
  - Price (rate) competition is intensifying
  - Physicians: More employed by hospitals, large inst. hurts exposure
  - Self-insurance by hospitals adds to downward pressure

- **Falling Investment Income**
  - Despite Fed “tapering,” rates remain low
  - More complete “normalization” will not occur until 2015, if then

- **Rising Number of Self-Insured Exposures**
  - Hospitals increasingly self-insure
  - More use of captives

- **Legal & Legislative Reform**
  - Tort reform law changes (caps)
  - Affordable Care Act (“ObamaCare”)
  - Impacts on practice of defensive medicine

- **Other: Reserves, Loss Frequency & Severity Trends**
Medical Errors: Rate of Lethal and Serious Adverse Events

Sept. 2013 study in the Journal of Patient Health suggests that 210,000 – 400,000+ die each year from preventable medical errors (implies 3rd leading cause of death in US)

Error Rate

RRG and Specialist market shares have risen over the past 10+ years.
MPL Statutory Net Income After Tax, 2006 – 2016F

MPL profits peaked in 2010. Falling rates and exposures and lower investment earnings are impacting the bottom line.

Rates and yields will need to improve to reverse the drop in profits.

Source: Conning.
MPL insurers in 2013 paid out an estimated $0.894 in loss and expense for every $1 they earned in premiums.

The dramatic improvement over the past decade has restored MPL’s viability, though some deterioration has occurred and is expected to continue.

In 2001, med mal insurers paid out $1.55 for every dollar earned.

Since 2005, MPL has outperformed the p/c insurance industry overall by a wide margin.

Average 2003-2012
All P/C Lines: 7.9%
MPL: 12.3%

Sources: NAIC.
ROEs are under pressure as underwriting results deteriorate and persistently low interest rates impact investment income.

As underwriting results deteriorate, ROEs are have begun to decline.

Source: Conning; Insurance Information Institute.
Capital and surplus growth in the MPL shows steady growth mirroring the overall P/C insurance industry.

Source: Conning.
Since 2006, MPL capital and surplus has grown at twice the pace of the p/c insurance industry overall.

Average 2006-2013E
All P/C Lines: 5.2%
MPL: 10.6%

Source: Insurance Information Institute from A.M. Best and Conning data.
## P/C Estimated Loss Reserve Deficiency/(Redundancy), Excl. Statutory Discount

<table>
<thead>
<tr>
<th>Line of Business</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Auto Liability</td>
<td>-$3.9B</td>
</tr>
<tr>
<td>Homeowners</td>
<td>-$0.4</td>
</tr>
<tr>
<td>Other Liab (incl. Prod Liab)</td>
<td>$7.5</td>
</tr>
<tr>
<td>Workers Compensation</td>
<td>$11.1</td>
</tr>
<tr>
<td>Commercial Multi Peril</td>
<td>$1.9</td>
</tr>
<tr>
<td>Commercial Auto Liability</td>
<td>$0.7</td>
</tr>
<tr>
<td><strong>Medical Malpractice</strong></td>
<td>-$3.5</td>
</tr>
<tr>
<td>Reinsurance—Nonprop Assumed</td>
<td>$1.0</td>
</tr>
<tr>
<td>All Other Lines*</td>
<td>-$4.6</td>
</tr>
<tr>
<td><strong>Total Core Reserves</strong></td>
<td>$9.8</td>
</tr>
<tr>
<td>Asbestos &amp; Environmental</td>
<td>$11.2</td>
</tr>
<tr>
<td><strong>Total P/C Industry</strong></td>
<td>$21.0B</td>
</tr>
</tbody>
</table>

MPL Direct Premiums Written: 2004-2016F

MPL direct premiums written have been declining steadily since 2006

MPL DPW is expected to drop to $9.36B in 2014, down 21.2% from its 2006 peak of $11.9B

Source: A.M. Best (2003-2012); Conning (2013-2016F); Insurance Information Institute.
Competition and an increasing number of self-insured exposures are weighing on MPL premium growth.
Incurred losses have been generally increasing since 2011 after years of sharp declines.

Source: Conning.
Medical Professional Liability: Change in Premium and Incurred Losses, 2006-2016F

Mid-2000s: Favorable loss trends precipitated lower prices and falling premium

Today: Premium seems to be lagging the increase in losses

Source: Insurance Information Institute from A.M. Best and Conning data.
Medical Professional Liability, RNW By State, Average 2003-2012

Top 25 States and DC

Source: NAIC; Insurance Information Institute.
Medical Professional Liability RNW By State, Average 2003-2012

Bottom 25 States

Source: NAIC; Insurance Information Institute
Medical Professional Liability, RNW By State, 2012

Top 25 States and DC

Source: NAIC; Insurance Information Institute.
Medical Professional Liability RNW By State, 2012

Bottom 25 States

Source: NAIC; Insurance Information Institute
Medical Professional Liability, RNW By State, 2003

Top 27 States and US

Source: NAIC; Insurance Information Institute.
Bottom 24 States and DC

Source: NAIC; Insurance Information Institute
Medical Professional Liability, RNW
By State, 2004

Top 25 States and DC

Source: NAIC; Insurance Information Institute.
Medical Professional Liability RNW By State, 2004

Bottom 25 States

Source: NAIC; Insurance Information Institute
Top 25 States and DC

Source: NAIC; Insurance Information Institute.
Source: NAIC; Insurance Information Institute
Medical Professional Liability, RNW By State, 2006

Top 25 States and DC

Source: NAIC; Insurance Information Institute.
Bottom 25 States

Source: NAIC; Insurance Information Institute
Medical Professional Liability, RNW By State, 2007

Top 25 States and DC

Source: NAIC; Insurance Information Institute.
Medical Professional Liability RNW By State, 2007

Bottom 25 States

Source: NAIC; Insurance Information Institute
Medical Professional Liability, RNW
By State, 2008

Top 25 States and DC

Source: NAIC; Insurance Information Institute.
Medical Professional Liability RNW By State, 2008

Bottom 25 States

Source: NAIC; Insurance Information Institute
Medical Professional Liability, RNW By State, 2009

Top 25 States and DC

Source: NAIC; Insurance Information Institute.
Medical Professional Liability RNW By State, 2009

Bottom 25 States

Source: NAIC; Insurance Information Institute
Medical Professional Liability, RNW By State, 2010

Top 25 States and DC

Source: NAIC; Insurance Information Institute.
## Medical Professional Liability RNW By State, 2010

**Bottom 25 States**

<table>
<thead>
<tr>
<th>State</th>
<th>RNW</th>
</tr>
</thead>
<tbody>
<tr>
<td>VA</td>
<td>18.0</td>
</tr>
<tr>
<td>WA</td>
<td>17.9</td>
</tr>
<tr>
<td>ME</td>
<td>17.8</td>
</tr>
<tr>
<td>MO</td>
<td>17.6</td>
</tr>
<tr>
<td>CA</td>
<td>17.2</td>
</tr>
<tr>
<td>GA</td>
<td>17.2</td>
</tr>
<tr>
<td>IN</td>
<td>17.1</td>
</tr>
<tr>
<td>FL</td>
<td>16.6</td>
</tr>
<tr>
<td>WI</td>
<td>16.2</td>
</tr>
<tr>
<td>US</td>
<td>15.2</td>
</tr>
<tr>
<td>DE</td>
<td>14.8</td>
</tr>
<tr>
<td>MA</td>
<td>14.3</td>
</tr>
<tr>
<td>VT</td>
<td>14.3</td>
</tr>
<tr>
<td>IL</td>
<td>12.7</td>
</tr>
<tr>
<td>SD</td>
<td>12.7</td>
</tr>
<tr>
<td>PA</td>
<td>12.4</td>
</tr>
<tr>
<td>MD</td>
<td>11.7</td>
</tr>
<tr>
<td>NM</td>
<td>11.1</td>
</tr>
<tr>
<td>UT</td>
<td>10.1</td>
</tr>
<tr>
<td>ID</td>
<td>9.5</td>
</tr>
<tr>
<td>NJ</td>
<td>9.0</td>
</tr>
<tr>
<td>NY</td>
<td>7.8</td>
</tr>
<tr>
<td>AK</td>
<td>5.1</td>
</tr>
<tr>
<td>RI</td>
<td>4.8</td>
</tr>
<tr>
<td>OK</td>
<td>1.7</td>
</tr>
<tr>
<td>MN</td>
<td>0.6</td>
</tr>
</tbody>
</table>

Source: NAIC; Insurance Information Institute
Medical Professional Liability, RNW By State, 2011

Top 25 States and DC

Source: NAIC; Insurance Information Institute.
Medical Professional Liability RNW By State, 2011

Bottom 25 States

Source: NAIC; Insurance Information Institute
The Affordable Care Act and Medical Professional Liability

A Summary of Potential Impacts
### Potential Impacts of the ACA on Medical Professional Liability

<table>
<thead>
<tr>
<th>Issue</th>
<th>Concern</th>
<th>Contravening Argument</th>
</tr>
</thead>
</table>
| Surge in People Covered by Health Insurance (VOLUME EFFECT) | • System is overwhelmed  
• Doctors spend less time on patients  
• Patient care adversely impacted | • Over time, people will have access to preventative care, improving the general health of the population  
• People are receiving care already via suboptimal channels  
• Less use of ERs |
| Electronic Health Records                  | • Digitization could create a treasure trove of data for plaintiff attorneys | • Computerization of patient data could help flag issues and improve risk management and improve patient outcomes |
| MPL Claim Severity                         | • More large verdicts                                                   | • ACA will help contain system costs                                                  |

Source: Insurance Information Institute research.
The projected decline in the uninsured population is very sensitive to the enrollment rate under the Affordable Care Act.

By 2018 the number of people under age 65 without insurance is expected to drop by 25 million (~45%).

*Under age 65.

As of March 1, 4.2 million people have signed up for coverage under the ACA since enrollment opened on Oct. 1, 2013.

HHS announced that enrollment as of 3/16 now exceeds 5 million.

As of June 2014, 76 million people (est.) are newly eligible for expanded benefits under the ACA. Much of the increase in MPL costs associated with the ACA results from a greater volume of care being rendered via new enrollees and benefit expansions.

Expected Increase in Rates of Insurance Coverage, by State, Due to the Patient Protection and Affordable Care Act (%) as of 2016

Med Malpractice: Estimated Changes in Liability Claim Costs, by State and Market, Due to the Patient Protection and Affordable Care Act (%) in 2016

Top 25 States and US

RAND estimates that the ACA will increase MPL claim costs by 2.8% by 2016, mostly due to increased patient volume.

Total MPL liability payouts in 2016 are projected to be $4.8 billion.

Bottom 25 States and DC

P/C Insurance Industry
Financial Overview

2013: Best Year in the Post-Crisis Era

- ROE figures are GAAP
- ROAS figures are GAAP; Excluding Mortgage & Financial Guaranty insurers yields an 8.2% ROAS through 2014:Q1, 9.8% ROAS in 2013, 6.2% ROAS in 2012, 4.7% ROAS for 2011, 7.6% for 2010 and 7.4% for 2009.

Sources: A.M. Best, ISO; Insurance Information Institute
Net Premium Growth: Annual Change, 1971—2014F

Shaded areas denote “hard market” periods
Sources: A.M. Best (historical and forecast), ISO, Insurance Information Institute.
Profitability Peaks & Troughs in the P/C Insurance Industry, 1975 – 2014:Q1*

*Profitability = P/C insurer ROEs. 2011-14 figures are estimates based on ROAS data. Note: Data for 2008-2014 exclude mortgage and financial guaranty insurers.
Source: Insurance Information Institute; NAIC, ISO, A.M. Best.

History suggests next ROE peak will be in 2016-2017

P/C Profitability Is Both by Cyclicality and Ordinary Volatility

As Recently as 2001, Insurers Paid Out Nearly $1.16 for Every $1 in Earned Premiums

Heavy Use of Reinsurance Lowered Net Losses

Relatively Low CAT Losses, Reserve Releases

Relatively Low CAT Losses, Reserve Releases

Avg. CAT Losses, More Reserve Releases

Higher CAT Losses, Shrinking Reserve Releases, Toll of Soft Market

Sandy Impacts

Lower CAT Losses

As Recently as 2001, Insurers Paid Out Nearly $1.16 for Every $1 in Earned Premiums

Heavy Use of Reinsurance Lowered Net Losses

Relatively Low CAT Losses, Reserve Releases

Relatively Low CAT Losses, Reserve Releases

Avg. CAT Losses, More Reserve Releases

Higher CAT Losses, Shrinking Reserve Releases, Toll of Soft Market

Sandy Impacts

Lower CAT Losses

Sources: A.M. Best, ISO.
A 100 Combined Ratio Isn’t What It Once Was: Investment Impact on ROEs

A combined ratio of about 100 generates an ROE of ~7.0% in 2012/13, ~7.5% ROE in 2009/10, 10% in 2005 and 16% in 1979.

Combined Ratios Must Be Lower in Today’s Depressed Investment Environment to Generate Risk Appropriate ROEs

* 2008-2014 figures are return on average surplus and exclude mortgage and financial guaranty insurers. 2014:Q1 combined ratio including M&FG insurers is 97.3; 2013 = 96.1; 2012 = 103.2, 2011 = 108.1, ROAS = 3.5%.

Source: Insurance Information Institute from A.M. Best and ISO Verisk Analytics data.
Note: 2005 reserve development excludes a $6 billion loss portfolio transfer between American Re and Munich Re. Including this transaction, total prior year adverse development in 2005 was $7 billion. The data from 2000 and subsequent years excludes development from financial guaranty and mortgage insurance.
Sources: A.M. Best, ISO, Barclays Research (estimates).
The P/C insurance industry entered 2014 in very strong financial condition.

The industry now has $1 of surplus for every $0.73 of NPW, close to the strongest claims-paying status in its history.

2010:Q1 data includes $22.5B of paid-in capital from a holding company parent for one insurer’s investment in a non-insurance business.

Sources: ISO, A.M. Best.
History Suggests that MPL, Like Other Long-Tailed Lines Is Much More Difficult to Underwrite
The Number of Impairments Varies Significantly Over the P/C Insurance Cycle, With Peaks Occurring Well into Hard Markets

Source: A.M. Best Special Report “Pace of P/C Impairments Slowed in 2012; Auto Writers, RRGs Continued to Struggle,” June 2013; Insurance Information Institute.
Impairment Rates Are Highly Correlated With Underwriting Performance and Reached Record Lows in 2007; Recent Increase Was Associated Primarily With Mortgage and Financial Guaranty Insurers and Not Representative of the Industry Overall.

2012 impairment rate was 0.69%, down from 1.11% in 2011; the rate is lower than the 0.82% average since 1969.

Source: A.M. Best; Insurance Information Institute

Historically, Deficient Loss Reserves and Inadequate Pricing Are By Far the Leading Cause of P-C Insurer Impairments. Investment and Catastrophe Losses Play a Much Smaller Role.

- Deficient Loss Reserves/Inadequate Pricing: 43.4%
- Reinsurance Failure: 3.1%
- Misc.: 8.4%
- Sig. Change in Business: 6.6%
- Alleged Fraud: 8.0%
- Affiliate Impairment: 7.1%
- Catastrophe Losses: 7.2%
- Rapid Growth: 12.6%

Source: A.M. Best Special Report “Pace of P/C Impairments Slowed in 2012; Auto Writers, RRGs Continued to Struggle,” June 2013; Insurance Information Institute.

Medical Professional Liability Accounts for Only About 2% of Industry DPW but 6.7% of Insurer Impairments

- Workers Comp: 22.2%
- Homeowners: 19.7%
- Pvt. Passenger Auto: 8.8%
- Commercial: 8.6%
- Other Liability: 8.6%
- Commercial Auto Liability: 7.3%
- Med Mal: 6.7%
- Surety: 4.8%
- Title: 4.0%
- Other: 8.6%

Source: A.M. Best Special Report “Pace of P/C Impairments Slowed in 2012; Auto Writers, RRGs Continued to Struggle,” June 2013; Insurance Information Institute.
The Challenge of Low Investment Yields Is a Critical Issue for MPL Insurers

Is Relief in Sight?
Due to persistently low interest rates, investment income fell in 2012 and in 2013 and is falling again in 2014.

1 Investment gains consist primarily of interest and stock dividends. *2014 investment income is estimated Q1, annualized. Sources: ISO; Insurance Information Institute.
Insurers Posted Net Realized Capital Gains in 2010 - 2013 Following Two Years of Realized Losses During the Financial Crisis. Realized Capital Losses Were a Primary Cause of 2008/2009’s Large Drop in Profits and ROE.

Sources: A.M. Best, ISO, Insurance Information Institute.
Investment gains in 2013 were their highest in the post-crisis era.

Investment Income Continued to Fall in 2013 Due to Low Interest Rates but Realized Investment Gains Were Up Sharply; The Financial Crisis Caused Investment Gains to Fall by 50% in 2008

1 Investment gains consist primarily of interest, stock dividends and realized capital gains and losses.

* 2005 figure includes special one-time dividend of $3.2B;

Sources: ISO; Insurance Information Institute.
Reduction in Combined Ratio Necessary to Offset 1% Decline in Investment Yield to Maintain Constant ROE, by Line*

*Based on 2008 Invested Assets and Earned Premiums
**US domestic reinsurance only
Source: A.M. Best; Insurance Information Institute.

Lower Investment Earnings Place a Greater Burden on Underwriting and Pricing Discipline
Yields on 10-Year U.S. Treasury Notes have been essentially below 5% for a full decade.

Yields on 10-Year U.S. Treasury Notes recently plunged to record modern-era lows in early 2013 but have since risen as the Fed begins “tapering” its QE program in 2014.

Since roughly 80% of P/C bond/cash investments are in 10-year or shorter durations, most P/C insurer portfolios will have low-yielding bonds for years to come.

Since roughly 80% of P/C bond/cash investments are in 10-year or shorter durations, most P/C insurer portfolios will have low-yielding bonds for years to come.

*Monthly, constant maturity, nominal rates, through July 2014.

Treasury Yield Curves: Pre-Crisis (July 2007) vs. Feb. 2014

Treasury yield curve remains near its most depressed level in at least 45 years. Investment income is falling as a result. Even as the Fed “tapers” rates are unlikely to return to pre-crisis levels anytime soon.

The Fed Is Actively Signaling that it Is Determined to Keep Rates Low Until Unemployment Drops Below 6.5% or Until Inflation Expectations Exceed 2.5%; Low Rates Add to Pricing Pressure for Insurers.

Source: Federal Reserve Board of Governors; Insurance Information Institute.
Treasury Yield Curves: Pre-Crisis (July 2007) vs. Feb. 2014

<table>
<thead>
<tr>
<th>Year</th>
<th>3-Month</th>
<th>5-Year</th>
<th>10-Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>4.85%</td>
<td>4.73%</td>
<td>4.63%</td>
</tr>
<tr>
<td>2007</td>
<td>4.80%</td>
<td>4.48%</td>
<td>4.43%</td>
</tr>
<tr>
<td>2008</td>
<td>3.66%</td>
<td>3.26%</td>
<td>3.22%</td>
</tr>
<tr>
<td>2009</td>
<td>2.80%</td>
<td>2.20%</td>
<td>2.78%</td>
</tr>
<tr>
<td>2010</td>
<td>1.40%</td>
<td>1.93%</td>
<td>1.52%</td>
</tr>
<tr>
<td>2011</td>
<td>0.15%</td>
<td>0.14%</td>
<td>0.06%</td>
</tr>
<tr>
<td>2012</td>
<td>0.15%</td>
<td>0.14%</td>
<td>0.06%</td>
</tr>
<tr>
<td>2013</td>
<td>0.15%</td>
<td>0.14%</td>
<td>0.06%</td>
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<tr>
<td>2014F</td>
<td>4.20%</td>
<td>3.50%</td>
<td>3.50%</td>
</tr>
<tr>
<td>2015F</td>
<td>3.50%</td>
<td>3.50%</td>
<td>3.50%</td>
</tr>
</tbody>
</table>

Higher longer-term yields will help insurers but short term yields are expected to lag behind.

Outlook for U.S. Treasury Bond Yields Through 2015

Longer-tail lines like MPL and workers comp will benefit the most from the normalization of yields.

Reduction in Combined Ratio Necessary to Offset 1% Decline in Investment Yield to Maintain Constant ROE, by Line*

Lower Investment Earnings Place a Greater Burden on Underwriting and Pricing Discipline

*Based on 2008 Invested Assets and Earned Premiums
**US domestic reinsurance only
Source: A.M. Best; Insurance Information Institute.
The main shift over these years has been from bonds with longer maturities to bonds with shorter maturities. The industry first trimmed its holdings of over-10-year bonds (from 24.6% in 2003 to 15.5% in 2012) and then trimmed bonds in the 5-10-year category (from 31.3% in 2003 to 27.6% in 2012). Falling average maturity of the P/C industry’s bond portfolio is contributing to a drop in investment income along with lower yields.

Sources: SNL Financial; Insurance Information Institute.
There are many ways to capture higher yields on bond portfolios. One is to accept greater risk, as measured by NAIC bond ratings. The ratings range from 1 to 6, with the highest quality rated 1. Even in 2012, over 95% of the industry’s bonds were rated 1 or 2.

Sources: SNL Financial; Insurance Information Institute.
Shifting Legal Liability & Tort Environment

Is the Tort Pendulum Swinging Against Insurers?
Over the Last Three Decades, Total Tort Costs as a % of GDP Appear Somewhat Cyclical, 1980-2013E

Tort costs in dollar terms have remained high but relatively stable since the mid-2000s, but are down substantially as a share of GDP.

Deepwater Horizon Spike in 2010

2.21% of GDP in 2003 = pre-tort reform peak

1.68% of GDP in 2013

Sources: Towers Watson, 2011 Update on US Tort Cost Trends, Appendix 1A
Commercial Lines Tort Costs: Insured vs. Self-(Un)Insured Shares, 1973-2010

Billions of Dollars

Tort Costs and the Share Retained by Risks Both Grew Rapidly from the mid-1970s to mid-2000s, When Tort Costs Began to Fall But Self-Insurance Shares Continued to Rise

1973: Commercial Tort Costs Totaled $6.49B, 94% was insured, 6% self-(un)insured

1985: $46.6B 74.5% insured, 25.5% self-(un)insured

1995: $83.6B 69.5% insured, 30.5% self-(un)insured

2005: $143.5B 66.4% insured, 33.6% self-(un)insured

2009: $126.5B 64.4% insured, 35.6% self-(un)insured

Commercial Lines Tort Costs: Insured vs. Self-(Un)Insured Shares, 1973-2010

The Share of Tort Costs Retained by Risks Has Been Steadily Increasing for Nearly 40 Years. This Trend Contributes Has Left Insurers With Less Control Over Pricing.

## Business Leaders Ranking of Liability Systems in 2012

### Best States

1. Delaware
2. Nebraska
3. Wyoming
4. Minnesota
5. Kansas
6. Idaho
7. Virginia
8. North Dakota
9. Utah
10. Iowa

### New in 2012

- Wyoming
- Minnesota
- Kansas
- Idaho

### Worst States

41. Florida
42. Oklahoma
43. Alabama
44. New Mexico
45. Montana
46. Illinois
47. California
48. Mississippi
49. Louisiana
50. West Virginia

### Drop-offs

- Indiana
- Colorado
- Massachusetts
- South Dakota

### Newly Notorious

- Oklahoma

### Rising Above

- Arkansas

The Nation’s Judicial Hellholes: 2012/2013

Source: American Tort Reform Association; Insurance Information Institute
CYBER RISK

Cyber Risk is a Rapidly Emerging Exposure for All Industries—Especially Healthcare/Medical

NEW III White Paper:
Data Breaches 2005-2013, by Number of Breaches and Records Exposed

The Total Number of Data Breaches (+38%) and Number of Records Exposed (+408%) in 2013 Soared

The majority of the 614 data breaches in 2013 affected business and medical/healthcare organizations, according to the Identity Theft Resource Center.

Medical/Health organizations accounted for nearly 43.8% of all cyber breaches in 2013, up from 34.5% in 2012.

Denial of service, malicious code and web-based attacks account for more than 55 percent of all cyber costs per U.S. organization on an annual basis.

External Cyber Crime Costs: Fiscal Year 2013

Information loss (43%) and business disruption or lost productivity (36%) account for the majority of external costs due to cyber crime.

Information loss is the major concern, business interruption could cause serious issues for health institutions as well.

* Other costs include direct and indirect costs that could not be allocated to a main external cost category

Negligent employees and malicious attacks are most often the cause of the data breach. Some 39 percent of incidents involve a negligent employee or contractor, while 37 percent concern a malicious or criminal attack.
Interest in cyber insurance continues to climb. The number of companies purchasing cyber insurance increased 33 percent from 2011 to 2012.

Cyber insurance limits purchased in 2012 averaged $16.8 million across all industries, an increase of nearly 20% over 2011.

Average 2012 limits compared to average 2011 limits for various industries:

- All Industries: $16.8 million
- Comms, Media, & Technology: $33.4 million
- Education: $8.1 million
- Financial Institutions: $26.0 million
- Health Care: $13.1 million
- Retail/Wholesale: $12.4 million
- Services: $12.6 million
- All Other: $20.7 million

Among larger companies, average cyber insurance limits purchased in 2012 increased nearly 30% over 2011.

($ Millions)

Thank you for your time and your attention!

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