Trends, Challenges & Opportunities in the L/H Insurance Industry

Insurance Information Institute
May 12, 2008
Presentation Outline

• What Forces Drive the Life/Health Insurance Industry?
• Profitability
• Premium Growth
• Investments
• Capacity
• Catastrophic Loss – An Avian Flu Pandemic?
• Regulatory and Legislative Environment

Q&A
What Forces “Drive” the Life-Health Insurance Industry?
Broad Economic Forces

a. The U.S. Economy
   i. Real (Inflation-adjusted) GDP
   ii. Inflation
      a) General Price Increases and
      b) Medical Care Cost Increases
         a) About half from new therapies
   iii. Employment $\rightarrow$ Employee Benefit Plan Participation
      a) Increased Cost-Shifting to Employees
   iv. Unemployment Rate $\rightarrow$ Lapses?
Real GDP Growth, * 2000-2009F

Slow economic growth is forecast for 2008

March 2001-November 2001 recession

Recession?

*Yellow bars are Forecasts.
Source: Blue Chip Economic Indicators, Vol. 33, No 3 (March 10, 2008), pp. 2-3.
Inflation was just 2.2% in 2007 but is accelerating.

*12-month change March 2008 vs. March 2007

Sources: US Bureau of Labor Statistics (historical rates); Blue Chip Economic Indicators, Mar. 10, 2008 (forecasts); Ins. Info. Institute.
Real National Health Spending Per Capita is Projected to Increase Rapidly Through 2015

Real Per Capita Spending is Projected to Grow at an Annual Rate of 6.4% through 2015

Nonfarm Employment Dropped in Connection with Each of the Last Three Recessions

*preliminary

A rising unemployment rate could increase the policy lapse rate and make new sales more difficult, but it could also show why flexible life insurance policies are valuable.
Broad Economic

b. Financial Markets
   i. Level/direction of long-term interest rates
   ii. Volatility (direction?) of stock market prices
Annual Average Interest Rate of 10-Year U.S. Treasury Note

Source: [http://federalreserve.gov/releases/h15/data/Annual/H15_TCMNOM_Y10.txt](http://federalreserve.gov/releases/h15/data/Annual/H15_TCMNOM_Y10.txt)
The Most Recent Five Years of the S&P 500: Does Anyone Remember 2000-2002?

From about 1500 in March 2000 the S&P dropped to about 800 in September 2002.
The Stock Market Became Much More Volatile Nearly 10 Months Ago

May 12, 2003 (Index starts)

July 19, 2007
Demographic

a. Changes in the composition of the U.S. population
   i. Aging of the “baby boom” generation will contribute to rising health care expenditures, health insurance costs
      a) But CBO says this will have a small effect on medical expenses in the short run
   ii. Decreases in death rates should make life insurance cheaper, annuities more valuable

b. Changes in buying preferences
   i. Buying through the workplace?
   ii. Internet communities?
Trends in Life Insurance Ownership, 1960-2004

Quarterly Change (vs. same quarter in prior year) in Applications for Individual U.S. Life Insurance Policies, 1999-2007

Effect of anticipated rate rise from increased reserve requirement for some term policies ("XXX" regulation)

9/11 effect

21 straight quarters of fewer applications than the year-earlier quarter; down again so far in 2008

Financial Services Marketplace Conditions

a. Life-Health Insurance Industry

b. New Products & Services from Banks, Mutual Funds, Retailers?

Political Environment

a. Health insurance “reform”
   i. Millions fewer uninsured?
   ii. New requirements to control insurer “overhead”?

b. Social security/Medicare “fixes”
   i. Will benefit cutbacks create opportunities for supplemental private insurance?
   ii. Will new taxes compete for dollars that might otherwise go to private insurance?

The Intermediate (green) Assumptions are considered Most Probable.

Source: 2008 Annual Report of the Trustees of the OASDI Trust Funds, p. 190-1
Under “Intermediate” Assumptions, Social Security Medicare (Part A) Cost is Currently Greater Than Income


Net Income/Outgo (Billions)

Net income-intermediate  Net income-low  Net income-high

The Intermediate (green) Assumptions are considered Most Probable.

Source: 2008 Annual Report of the Trustees of the OASDI Trust Funds, p. 190-1
What Forces “Drive” the Industry? (cont’d)

Regulatory Environment
a. Market conduct regulation
   i. Suitability
   ii. Secondary market for life insurance
b. Accounting regulation

Technology/Culture
a. Use of the Internet
   i. Will insurance-buying incorporate scenarios, “Monte Carlo” risk calculations for death, longevity?
   ii. Will the internet affect product development? Claims processing?

b. Retirement planning
   i. Will a retirement planning “craze” sweep the country?
How Might the Economy Affect L/H Insurers?
Do Policy Loans Increase During/Following a Recession? Yes.

Ordinary Life Insurance Lapse Rates, 1996-2006

March 2001-November 2001 recession. Was the spike recession-related?

Sources: NAIC Annual Statements, p. 26 line 15, from National Underwriter HighlineData.
### What’s Being Done to Fix the Economy? ➔ Impacts on Insurers

<table>
<thead>
<tr>
<th>Economic Fix</th>
<th>Impacts on L/H Insurers</th>
</tr>
</thead>
</table>
| Fed Rate Cuts                 | • Indirectly reduces bond yields  
                                 • Potentially contributes to inflation longer run |
| Fed Debt Swap                 | • No direct effect; could lessen “write downs” insurers will need to make on their balance sheets |
| Fed Bailout of Bear Stearns   | • “Too Big to Fail” doctrine is re-activated  
                                 • Likely to lead to increased regulatory oversight of investment banks, hedge funds  
                                 • Could become stimulus for broad overhaul of financial services regulation—including life/health insurers |
What’s Being Done to Fix the Economy? → Impacts on Insurers (cont’d)

<table>
<thead>
<tr>
<th>Economic Fix</th>
<th>Impacts on Insurers</th>
</tr>
</thead>
</table>
| Stimulus Package    | • Hope is that $168B plan boosts overall economic activity and employment (by 500,000 jobs?)
|                     | • Could lessen policy lapses                                                          |
|                     | • But cost of package contributes to already exploding budget deficits—Washington may expand its search for people and industries to tax |
## Summary of Economic Risks and Implications for Insurers

<table>
<thead>
<tr>
<th>Economic Concern</th>
<th>Risks to L/H Insurers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Subprime Meltdown/ Credit Crunch</strong></td>
<td>• Some insurers have some asset risk</td>
</tr>
<tr>
<td></td>
<td>• Client asset management liability for some</td>
</tr>
<tr>
<td></td>
<td>• Bond insurer problems; Muni credit quality</td>
</tr>
<tr>
<td><strong>Housing Slump</strong></td>
<td>• Reduced demand for mortgage-related life insurance</td>
</tr>
<tr>
<td><strong>Lower Interest Rates</strong></td>
<td>• Lower investment income</td>
</tr>
<tr>
<td></td>
<td>• Profit squeeze on products with interest rate guarantees</td>
</tr>
<tr>
<td><strong>Stock Market Slump</strong></td>
<td>• Decreased capital gains</td>
</tr>
<tr>
<td><strong>General Economic Slowdown/Recession</strong></td>
<td>• Reduced growth in employer-sponsored coverages and employee-pay-all coverages</td>
</tr>
</tbody>
</table>
L-H Industry
Profitability
The 1995-2006 compound average annual net income growth rate was 9.3%.

2006 net income rose only 0.8% despite 10.5% net premium growth, because surrenders grew 20.4%, disability benefits grew 21.6%, and total expenses grew 13.1%.
U.S. GDP vs. L/H Industry Net Income: Fairly Strong Association

ROE: L/H Generally Above P/C Insurers but Below Fortune 500

Source: Insurance Information Institute; Fortune. 2007 insurer data are for stock insurers only.
Sources of U.S. Life Insurance Industry Profits, 2006

Group Annuities: 15%
Individual Annuities: 23%
Individual Life: 23%
Group Life: 6%
Other Life: 3%
Group A&H: 18%
Other A&H: 8%
Misc: 4%

Source: NAIC Annual Statements, p. 6, from National Underwriter HighlineData.
L-H Premium Growth
Individual Life Insurance
Product Trends, 1976-2006E

Source: LIMRA.
*LIMRA’s annualized premium calculation includes 10% of single premiums but excludes (a) excess (dump-in) premiums on universal and variable universal life plans and (b) large-case corporate-owned life insurance.

Term share would be larger if term premiums hadn’t come down so much.

Rise in UL market share caused by STOLI activity? “No lapse” guarantees? Indexed UL?
Life Insurance & Annuity US Market Concentration, by HHI

The US Department of Justice, which uses HHI to help decide which proposed mergers might seriously lessen competition, considers a market too concentrated if the HHI is over 1800.

U.S. GDP vs. Life Insurance Premiums: Fairly Strong Association

U.S. GDP vs. Annuity Premiums: Fairly Strong Association

Billions

Annuity Premiums
Nominal GDP


“Recodification”: certain deposit-type funds excluded.

U.S. GDP vs. Health Insurance Premiums: Fairly Strong Association

Group Insurance Premiums Have Generally Grown Faster than Nonfarm Employment

Historical and Forecast Term Life Insurance Rates

$500,000 20-year level term issued to 40-year-old male nonsmoker

On average in 2008, premium rates for term life insurance are expected to fall 1% from rates in 2007.

Source: Accuquote; Insurance Information Institute Forecast for 2008.
Medical Expense Premiums Have Grown Much Faster Than Wages or Inflation

Data are for Spring to Spring of each year, for a family of 4. Average premium is weighted by covered workers.

Shift to HD plans might slow rate of increase.

Source: Kaiser Family Foundation, Employer Health Benefits 2007 Annual Survey, Exhibit A.
Reliance on 1st-year and Single Premiums, by Line of Business, 2006

Individual Life Insurance
- Renewals 62.6%
- First-year premiums 14.8%
- Single Premiums 22.8%

Individual Annuities
- Renewals 14.5%
- First-year premiums 41.3%
- Single premiums 44.2%

Source: NAIC Annual Statements, from National Underwriter HighlineData; I.I.I. calculations. 41
Individual Annuity Sales, 1999-2007

Fixed annuity sales doubled from 2000 to 2002 but have faded steadily since then.

Variable sales dropped after the stock market plunge in 2000 but recovered by 2004. **2006 was a record year, up 17%.** 2007 was up 15% over 2006.

Room for Growth if Boomers Progress Toward Retirement Savings Goals

Source: MetLife Employee Benefits Trends Study (2006)
Quarterly Labor Force Participation Rate, Ages 65-69, 1998-2008

The labor force participation rate for workers 65-69 has grown considerably since 1998. It might grow even faster in the future as seniors find they can’t fully retire on their meager retirement savings.

The labor force participation rate for workers 70-74 has also grown considerably—by about 50%—since 1998. It too might grow even faster in the future as seniors find they can’t fully retire on their meager retirement savings.
The labor force participation rate for workers 75 and over has grown slowly in absolute terms—but relatively by about 50%—since 1998.

Investments
The pie chart shows only general account assets. Separate account assets, mostly in stocks, in 2006 totaled $1.71 trillion.

Sources: NAIC Annual Statements, via National Underwriter HighlineData; I.I.I. calculations
L/H Net Rate on General Account Assets Tends to Follow 10-Year US T-Note

This is unlikely to increase any time soon.

Sources: ACLI Life Insurers Fact Book 2007, p. 43; [http://federalreserve.gov/releases/h15/data/Annual/H15_TCMNOM_Y10.txt](http://federalreserve.gov/releases/h15/data/Annual/H15_TCMNOM_Y10.txt)
Effect of Capital Gains & Losses on Net Income, 1995-2006

Source: NAIC Annual Statement data, Summary of Operations and Exhibit of Capital Gains (Losses) from Highline National Underwriter
L/H Insurance Stocks: Lag S&P to Date in 2008

Total YTD Returns Through May 9, 2008

<table>
<thead>
<tr>
<th></th>
<th>Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>S&amp;P 500</td>
<td>-4.80%</td>
</tr>
<tr>
<td>Life/Health</td>
<td>-8.22%</td>
</tr>
<tr>
<td>All Insurers</td>
<td>-7.89%</td>
</tr>
<tr>
<td>Property/Casualty</td>
<td>-17.48%</td>
</tr>
<tr>
<td>Reinsurers</td>
<td>-24.75%</td>
</tr>
<tr>
<td>Multiline</td>
<td>-17.47%</td>
</tr>
<tr>
<td>Managed Care</td>
<td>-36.25%</td>
</tr>
<tr>
<td>Mortgage &amp; Financial Guaranty</td>
<td>-54.41%</td>
</tr>
</tbody>
</table>

Sources: SNL Securities, Standard & Poor's
Top Weights: Multiline (AIG, 66.0%; Hartford, 11.1%, Loews, 8.7%).
P/C (Berkshire, 30.1%, Allstate, 10.0%, Travelers, 8.8%).
L/H (MetLife, 21.7%, Prudential, 19.5%, Aflac 10.8%).
All Insurers: (AIG, 15.9%; Berkshire, 10.7%; United Health, 6.2%; WellPoint, 4.2%; MetLife, 4.2%, Prudential, 3.8%, Allstate, 3.5%, Travelers, 3.1%; Hartford, 2.7%; Loews, 2.1%)
Third-Party
Asset Management
Third-Party Management of Insurers’ Assets is Growing Rapidly

- From mid-2005 to 3/31/2007, General Account assets outsourced to the 50 leading managers grew to $800 billion – a 28% increase
- Total assets outsourced grew to $1.2 trillion
- The 10 largest managers control 80% of the assets outsourced to the top 59 managers.
- But some managers are getting out
  - Phoenix announced in Feb that it is selling its $40B AM subsidiary, saying it’s a non-core business unit
Third-Party Management of Insurers’ Assets Will Continue Growing Rapidly

- European and Asian insurers are just now discovering outsourcing

- Even large insurers are turning to outsourcing to tap into superior expertise in international investing
  - For portfolio diversification
  - To support insurance operations in foreign countries

- Together with investment management, outsourcing firms offer other related services, such as cash flow modeling and investment risk management
Top 15 Managers of Outsourced L/H Insurers’ Assets (as of 3/31/2007)

Source: www.pionline.com

The top 3 manage nearly half of all outsourced assets.
Financial Strength and Ratings of Life Insurance and Annuity Companies
The industry is financially stronger now than in 1996. Since then, surplus grew 73% while benefits and reserves grew 55%.

“Surplus” is a measure of underwriting capacity. It is analogous to “Owners Equity” or “Net Worth” in non-insurance organizations.

Source: NAIC Annual Statements, p.3, line 37, via National Underwriter HighlineData.
“Surplus” as calculated here includes IMR and MSVR/AVR reserves.

By this measure, the industry was as strong in 2006 as in 1995, but with less “cushion” during the decade.
Securitization of Assets and Liabilities
What's Behind the Drive to Securitize?

- Two types of securities
  - Those that act as reinsurance, such as bonds that “pay off” (i.e., principal repayment ends) if claims exceed a set limit
    - Depending on reinsurance rates, these bonds can be cheaper than buying traditional reinsurance
  - Those that act to “free up” capital that would otherwise be “tied up” in reserves
    - Freed-up capital can be used for dividends, corporate acquisition, or any capital-intensive initiative
- For the buyer,
  - These securities constitute an asset class that is uncorrelated with other asset classes – thus a good diversifier
Market Conduct Issues

- Annuity Suitability
- Stranger-Originated Life Insurance (StOLI)
- Long-Term Care and Disability Income Claims Management
What’s the Issue Involving Annuity Suitability?

- From time to time, regulators receive complaints when unsophisticated buyers of life/health insurance discover features that cause them to lose money
  - Unsuitable sales to military
- Recent concerns relate to seniors buying deferred annuities with high surrender charges/long surrender charge periods
  - Video clip from “Dateline”? 
What’s the Issue Involving Annuity Suitability? (cont’d)

- The NAIC and NASD (now FINRA) have long had regulations regarding conduct to establish annuity suitability
  - But the NAIC’s model isn’t enacted in many states
  - But both bodies specify only what to take into account, not how to take it into account, in determining suitability

- One concern relates to indexed annuities sold by people without licenses to sell variable products. It’s argued that
  - Sales reps who aren’t licensed to sell variable products might not fully understand the (fixed) indexed annuity they’re selling and, more importantly,
  - Because they can’t legally compare variable annuities with (fixed) indexed annuities, they can’t properly consider alternatives that might be more suitable for the consumer
What’s the Remedy to Prevent Unsuitable Annuity Sales?

• Hold insurers as well as agents/brokers responsible for assuring that the sale is suitable
  ➢ Rely on multiple layers of review to catch sales that might be considered unsuitable
  ➢ Rely on disclosure documents whose format is prepared by, and whose contents are reviewed by, insurers, to assure that all potential buyers see the same explanatory information
  ➢ Hold insurers responsible for training sales reps and reviewers, to assure that all are competent to perform their respective tasks
In 2007, Who Sold Each Type of Individual Annuity?

Many PPGAs and bank agents are not licensed to sell variable products.

Reinsurance

Sources: NAIC Annual Statements, p. 9 line 20.1 through 20.3, from National Underwriter HighlineData.
Expenses
General Expenses as % of Direct Premiums in the Life Insurance LOB, 1996-2006

Can we call this a downward trend?

Spending on advertising crept up slightly over this period, from 0.86% of direct premiums to 0.91%.

Sources: NAIC Annual Statements, Exhibit 2, line 10 and p. 9, line 20.1, from National Underwriter HighlineData; I.I.I. calculations
Salaries/Wages as % of Direct Premiums in the Life Insurance LOB, 1996-2006

Can we call this a downward trend?

Is the decreasing percentage the result of productivity enhancements or merely a correction for the growth from 1996-2000?

Sources: NAIC Annual Statements, Exhibit 2, line 2 and p. 9, line 20.1, from National Underwriter HighlineData; I.I.I. calculations
Catastrophic Loss

An Avian Flu Pandemic?
What is a pandemic?

**Pandemic** – a multi-country or global outbreak of an infectious disease

**Epidemic** – an infectious disease outbreak that is confined to one country (but might affect several areas within the country)
Baseline: U.S. death rates from various causes, 2004

<table>
<thead>
<tr>
<th>Cause of death</th>
<th>Number of deaths</th>
<th>Percent of 2004 deaths</th>
<th>Age-adjusted Rate per 100,000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td>All deaths</td>
<td>2,397,615</td>
<td>100.0</td>
<td><strong>800.8</strong></td>
</tr>
<tr>
<td>Heart disease</td>
<td>652,486</td>
<td>27.2</td>
<td><strong>217.0</strong></td>
</tr>
<tr>
<td>Cancers</td>
<td>553,888</td>
<td>23.1</td>
<td><strong>185.8</strong></td>
</tr>
<tr>
<td>Strokes</td>
<td>150,074</td>
<td>6.3</td>
<td><strong>50.0</strong></td>
</tr>
<tr>
<td>Respiratory disease</td>
<td>121,987</td>
<td>5.1</td>
<td><strong>41.1</strong></td>
</tr>
<tr>
<td>Accidents</td>
<td>112,012</td>
<td>4.7</td>
<td><strong>37.7</strong></td>
</tr>
<tr>
<td>Diabetes</td>
<td>73,138</td>
<td>3.1</td>
<td><strong>24.5</strong></td>
</tr>
<tr>
<td>Alzheimer’s disease</td>
<td>65,965</td>
<td>2.8</td>
<td><strong>21.8</strong></td>
</tr>
<tr>
<td>Influenza/ Pneumonia</td>
<td><strong>59,664</strong></td>
<td><strong>2.5</strong></td>
<td><strong>19.8</strong></td>
</tr>
<tr>
<td>Kidney disease</td>
<td>42,480</td>
<td>1.8</td>
<td><strong>14.2</strong></td>
</tr>
<tr>
<td>Septicemia</td>
<td>33,373</td>
<td>1.4</td>
<td><strong>11.2</strong></td>
</tr>
</tbody>
</table>

In a typical year, “the flu” and pneumonia (with which it is often confused) are the 8th leading cause of death.

Half of all deaths occurred in one month – October 1918

Third “wave” of the same flu strain hit in January 1919, continuing the pandemic

Source: [http://www.cdc.gov/nchs/data/statab/lead1900_98.pdf](http://www.cdc.gov/nchs/data/statab/lead1900_98.pdf)
1918 Influenza Pandemic
Mortality Pattern

- Typically, the flu kills the very young and the very old, not adults “in the prime of life.” But in 1918, the largest death toll was in the 25-34 age group
  - One authority speculates that this was because this group had high rates of endemic tuberculosis. They note that tuberculosis death rates fell sharply in the early 1920s.

- Wide variation of mortality
  - Pregnant mothers in Kansas experienced more than 10 times the increase in mortality rates compared to pregnant mothers in Wisconsin
  - States with the highest mortality rates not adjacent: Pennsylvania, Montana, Colorado, Maryland
  - Within-states variation: death rate in St. Paul, MN was 70% higher than in Minneapolis

How bad could a pandemic be?

- In 1918-1919, a flu strain killed 675,000 Americans and 50-100 million worldwide (world population in 1918: 1.8 billion)

- In 1957, a “moderate” strain killed 70,000 in the U.S. and 2 million worldwide

- In 1968 another moderate strain killed 34,000 in the U.S.
Models: What could happen today?

• HHS uses the 1918 experience as a “severe” model and the average of the 1957-1968 experience as a “moderate” model

• HHS assumes that, whether the pandemic is moderate or severe, 30 percent of the population would get sick. In the U.S. today, this translates into 90 million sick people.

• In a severe pandemic, using 1918 death rates, 2.1 percent of the sick would die. In the U.S. this translates into 1.89 million dead from the flu alone.

• Added to the “regular” 2.4 million deaths from all other causes in the U.S. each year, a severe flu outbreak would increase total U.S. deaths to 4.3 million.
What could happen today? (cont’d)

• In the current “bird flu” outbreak (from December 2003 through April 30, 2008, the latest WHO data), 382 people are confirmed to have become sick from an H5N1 strain, and 241 of them – 63 percent – died.

• But the death rate varies. In 2004, it was 70 percent. In 2005, it was 43 percent. Since 2005 it has been 69 percent.

• If the virus mutates to become more contagious but 1/20th as lethal as in 2007, it would kill 3.2 percent of those who become ill. This is 150% of the 1918 rate!
The Current A/H5N1 Influenza Pandemic is 34 Times More Lethal than in 1918!

2007 Lethality varied: 36% of 25 cases in Egypt, 88% of 42 cases in Indonesia.

The 2006-8 death rate is 69.4%. The 1918 pandemic death rate was 2.1%.

*Includes 4 cases, all deaths, from the final week of 2003.
Why it could be worse than ever

• Thanks to more extensive international travel, a pandemic virus could spread worldwide before we’re able to take countermeasures

• There might not be enough vaccines or anti-viral medicine for every one who becomes sick
  ➢ Current production technologies can take up to 6 months to produce a vaccine

• We might not be able to get the vaccines or anti-viral medicine to the sick fast enough to help
  ➢ The CDC recently reported that, in the U.S., influenza vaccine distribution delays or supply shortages occurred in 3 of the last 5 flu seasons
Why it could be worse than ever
(cont’d)

• Over 1 million people in the U.S. have compromised immune systems from HIV/AIDS

• Many others have weakened immune systems from cancer treatments, autoimmune illnesses (an estimated 50 million people in the U.S.), and other causes

• No one will have immunity from prior outbreaks of similar “flu” strains, (unlike 1918, when some people
  ➢ over age 30 had some immunity from an 1889 flu pandemic and
  ➢ over age 71 had some immunity from an 1847 flu pandemic)
Economic effects of a pandemic
The influenza pandemic peaked in the U.S. in Fall 1918, but the market was slightly up in October, flat for the season.
Effect of a “severe” pandemic on the U.S. economy

A severe pandemic

• “…implies about 4¼ percent reduction in [real] GDP in the year of the pandemic” [versus what would have happened if no pandemic occurred]

• “would have an impact on the U.S. economy that was slightly larger than the typical recession experienced during the period since World War II.”

Effect of a “moderate” pandemic on the U.S. economy

A moderate pandemic

• real GDP would be reduced by 1 percent relative to no pandemic

• “might not even be distinguishable in the normal ups and downs of economic activity”

Long-term effect of a pandemic on the U.S. economy

- But all of the economic models focus only on the pandemic period – generally 3 months.

- None take a longer view to account for productivity losses due to
  - anxiety, stress, depression of the continuing workers
  - lost skills and/or knowledge of dead or disabled workers
  - Unexpected early retirements due to illness or disaffection with working
Long-term effect of a pandemic on the U.S. economy (cont’d)

On the other hand, the models also ignore the following offsets to economic losses:

- Private life or disability income insurance
- Social Security disability or survivors’ benefits
- Private medical expense insurance
- Medicare or Medicaid
- Workers Compensation benefits
- The effect of counseling and other services from EAPs on worker productivity
## Effect of a “severe” pandemic on U.S. life insurers

<table>
<thead>
<tr>
<th>Age range</th>
<th>25-34</th>
<th>35-44</th>
<th>45-54</th>
<th>55-64</th>
<th>65 and over</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projected deaths*</td>
<td>378,650</td>
<td>268,600</td>
<td>44,000</td>
<td>123,450</td>
<td>526,700</td>
</tr>
<tr>
<td>% who own group life insurance</td>
<td>46%</td>
<td>51%</td>
<td>48%</td>
<td>42%</td>
<td>20%</td>
</tr>
<tr>
<td>Mean group life benefit</td>
<td>$100,300</td>
<td>$210,300</td>
<td>$109,500</td>
<td>$99,200</td>
<td>$48,400</td>
</tr>
<tr>
<td>Projected group life claims ($bn)</td>
<td><strong>$17.5</strong></td>
<td><strong>$28.8</strong></td>
<td><strong>$2.3</strong></td>
<td><strong>$5.1</strong></td>
<td><strong>$5.1</strong></td>
</tr>
<tr>
<td>% who own indiv. life insurance</td>
<td>27%</td>
<td>43%</td>
<td>52%</td>
<td>46%</td>
<td>51%</td>
</tr>
<tr>
<td>Mean indiv. life benefit</td>
<td>$173,500</td>
<td>$400,250</td>
<td>$150,950</td>
<td>$126,200</td>
<td>$81,850</td>
</tr>
<tr>
<td>Projected indiv. life claims ($bn)</td>
<td><strong>$17.7</strong></td>
<td><strong>$46.2</strong></td>
<td><strong>$3.5</strong></td>
<td><strong>$7.2</strong></td>
<td><strong>$22.0</strong></td>
</tr>
</tbody>
</table>

*Uses the 1918 mortality pattern, but adds 100,000 deaths to the 65+ age group. Assumes 558,600 deaths in the 0-24 age range, for a total of 1,900,000 deaths. Source for life insurance ownership data: LIMRA, “Trends in Life Insurance Ownership, 2005,” with I.I.I. projections to 2006. Claims projected by I.I.I.
Flu pandemics and disability
The lack of data on pandemic-caused disability

Although we have excellent historical data on U.S. mortality in the 1918, 1957, and 1968 flu pandemics, we have no historical disability data from those pandemics.

But we do have research proving that the 1918 pandemic caused a large number of serious short- and long-term disabilities.
Morbidity effects of a “severe” pandemic

- Definite linkage between influenza and stroke.”

- “There is no doubt that the effect of the influenza virus on the nervous system is hardly second to its effect on the respiratory tract.”

- “A wide spectrum of central nervous system involvement has been observed during influenza A virus infections in humans, ranging from … confusion to the more serious manifestations of psychosis, delirium, and coma.”

- Influenza “linked to an increase in Parkinson’s disease a decade later.”

- Menninger spoke of the ‘almost unequalled neurotoxicity of influenza.’”

Long-term morbidity effects of a “severe” pandemic

Individuals who were *in utero* during the 1918 pandemic

- have more trouble hearing, speaking, lifting, and walking
- have more diabetes
- have higher rates of stroke in their 70s and 80s
- have higher 90-days-or-longer-disability rates
- have lower educational attainment and lower wages
- were in jail in 1940 to a greater extent

than would be expected. These differences are large and statistically significant.

Long-term morbidity effects of a “severe” pandemic

- Individuals who survive a severe pandemic may develop Post Traumatic Stress Disorder (PTSD).

- PTSD is a psychiatric disorder that can occur following the experience or witnessing of life-threatening events such as military combat, natural disasters, terrorist incidents, serious accidents, or violent personal assaults like rape.

### Death Rates for Iraq Combat Troops vs. Adults in 1918 Flu Pandemic

<table>
<thead>
<tr>
<th>Age Group</th>
<th>2003-2005 Death Rates per 100,000 Troops</th>
<th>1918 Death Rates per 100,000 in Age Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combat Arms</td>
<td>887.3</td>
<td>992.6</td>
</tr>
<tr>
<td>Combat Arms Support</td>
<td>235.1</td>
<td>580.5</td>
</tr>
<tr>
<td>Ages 15-24</td>
<td>580.5</td>
<td>554.8</td>
</tr>
<tr>
<td>Ages 25-34</td>
<td>992.6</td>
<td>347.8</td>
</tr>
<tr>
<td>Ages 35-44</td>
<td>554.8</td>
<td>381.9</td>
</tr>
<tr>
<td>Ages 45-54</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ages 55-64</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Military data are for the period March 2003 through May 2005.
Nearly 30 percent of returning army and marine personnel exhibit at least one symptom of mental illness.

### Hospital utilization – severe (1918) scenario

<table>
<thead>
<tr>
<th>Pandemic Influenza Impact</th>
<th>Week #</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td><strong>Hospital Capacity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># patients in hospital</td>
<td>7,643</td>
<td>25,277</td>
<td>11,521</td>
</tr>
<tr>
<td>% hospital capacity</td>
<td>96%</td>
<td>318%</td>
<td>145%</td>
</tr>
<tr>
<td><strong>ICU Capacity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># patients in ICU</td>
<td>1,319</td>
<td>11,217</td>
<td>8,593</td>
</tr>
<tr>
<td>% of ICU needed</td>
<td>476%</td>
<td>4,050%</td>
<td>3,102%</td>
</tr>
<tr>
<td><strong>Ventilator Capacity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># patients ventilators</td>
<td>659</td>
<td>5,609</td>
<td>4,296</td>
</tr>
<tr>
<td>% usage of ventilator</td>
<td>471%</td>
<td>4,006%</td>
<td>3,069%</td>
</tr>
</tbody>
</table>

Source: Local statistics, modeled in FluSurge 2.0 (http://www.dhhs.gov/nvpo/pandemics/) by Dr. Thomas Ashley, Vice President and Chief Medical Director, Gen Re LifeHealth; used with permission.
Pandemic Flu Resources

The World Health Organization
•  www.who.int/csr/disease/avian_influenza/en/index.html

U.S. Dept of Health & Human Services
•  http://www.pandemicflu.gov/

On vaccine development
•  http://healthyamericans.org/reports/fluscience/FluScience.pdf

On economic models on the effect of a pandemic
•  https://www.fsscc.org/influenza/economic_impact.pdf

National Strategy for Pandemic Influenza
•  http://www.whitehouse.gov/homeland/pandemic-influenza.html
Insurance Information Institute
• http://www.iii.org/media/hottopics/additional/birdflu/
  [This is a link to my paper “Pandemic: Can the Life Insurance Industry Survive the Avian Flu”]

Center for Infectious Disease Research & Policy, University of Minnesota
• http://www.cidrap.umn.edu/cidrap/content/influenza/avianflu/

“Modeling Community Containment for Pandemic Influenza”
• http://www.nap.edu/catalog/11800.html
Catastrophic Loss?
The Obesity Epidemic
What Do We Mean by “Obesity” and How Do We Measure It?

Definitions:

• **Obesity**
  - Having a very high amount of body fat in relation to lean body mass
  - Body Mass Index of 30 or higher

• **Body Mass Index (BMI)**
  - A measure of an adult’s weight in relation to his or her height,
  - Specifically, the adult’s weight in kilograms divided by the square of his or her height in meters

Note: This slide and the next 23 slides are courtesy of the Centers for Disease Control and Prevention.
Obesity Trends* Among U.S. Adults

BRFSS, 1985

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)

BRFSS is the CDC’s Behavioral Risk Factor Surveillance System. Each year, state health departments use standard procedures to collect data through a series of monthly telephone interviews with U.S. adults.

Not a complete picture; many states didn’t provide data then.
Obesity Trends* Among U.S. Adults
BRFSS, 1986

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1987

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1988

(*BMI $\geq 30$, or ~ 30 lbs. overweight for 5' 4" person)
Obesity Trends* Among U.S. Adults
BRFSS, 1989

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1990

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1991

(*BMI ≥30, or ~30 lbs. overweight for 5’4” person)
Obesity Trends * Among U.S. Adults

BRFSS, 1992

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)

Map showing obesity trends among U.S. adults in 1992, with color coding indicating different percentage ranges.
Obesity Trends* Among U.S. Adults

BRFSS, 1993

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults

BRFSS, 1994

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends * Among U.S. Adults

BRFSS, 1995

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults

BRFSS, 1996

(*BMI ≥ 30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults

*BMI ≥30, or ~30 lbs. overweight for 5’ 4” person

No Data          <10%           10%–14% 15%–19%  ≥20%
Obesity Trends * Among U.S. Adults

_BRFSS, 1998_ (*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults

*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person

No Data         <10%           10%–14%  15%–19%  ≥20%

*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person
Obesity Trends * Among U.S. Adults

BRFSS, 2000

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults

BRFSS, 2001

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 2002

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults

BRFSS, 2003

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends * Among U.S. Adults

*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person

BRFSS, 2004

No Data          <10%           10%–14% 15%–19%           20%–24% ≥25%
Obesity Trends * Among U.S. Adults

BRFSS, 2005

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends * Among U.S. Adults

BRFSS, 2006

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
(*BMI ≥ 30, or about 30 lbs. overweight for 5’4” person)

1990

1998

2006

No Data          <10%           10%–14% 15%–19%           20%–24%          25%–29%          ≥30%
Other Issues We Could Talk About

- The Uninsured (for Health Care) Population
- The Future of Long-Term Care Insurance as a Viable Product for Life/Health Insurers
- The Impact on Insurers of Principles-Based Reserving
- The Impact of Marked-to-Market Accounting
How Important is Having Medical Expense Insurance?

Estimated Percent of People Under 65 in 2004 Who Delayed or Didn’t Receive Medical Care due to Cost, by Health Insurance Status

Other Regulatory Issues
Other Regulatory Issues

- **Optional Federal Chartering**: Recommended in Treasury plan; Still divisive issue
- **Tax Issues**:  
  - Taxation of inside build-up?  
  - Return of Federal Estate Tax?  
- **Agent Credential Regulation**: Hearings earlier this year

Source: III
My Financial House software helps you organize and assess your current financial situation.
If you would like a copy of this presentation, please give me your business card with e-mail address