Potential Impact of Extreme Events on the U.S. Health Insurance Industry

presented by

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Summary

- Types of Extreme Events
- Modeling Extreme Events
  - Defining the Scenario
  - Impact on Providers
  - Impact on Insurers
  - Impact on Self Insurers
- Other Issues
Types of Extreme Events

- **Natural Disasters**
  - Hurricanes, Earthquake, Tsunami
  - Pandemic, Fire, Heatwave

- **Human**
  - Terror
  - Bio-Terror
  - Environmental
Scale

- Local, Regional, National
  - 2003 Rhode Island Nightclub Fire
  - Katrina
  - Pandemic

- Impact on Surge Capacity
Vulnerable Populations

- Elderly & Poor
- Lack of Social Safety Net
- Cultural Differences
Modeling an Extreme Event
Scope

- United States
- Private Payors
  - Insured and Self-Insured
- Medical Only
  - No LTD, STD, LTC
- Quantify Results
  - Spreadsheet model
  - Scalable to company level
Modeling Approach

Run a simulation of our productivity if we lost half our workforce to a pandemic.

Should I assume we lose the productive people or the people who ask other people to run pandemic simulations?

Try both ways. Okay. I'm done.

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Modeling Approach

- How Many Covered Individuals Get Sick
- What Type of Care They Receive
  - Severity of Illness
  - Provider Capacity
- Estimate the Cost of Services
- Distribute Costs
- *Three Scenarios Contemplated*
Pandemic Scenario Assumptions
Pandemic Scenario Assumptions

- Morbidity
- Waves
- Mitigation and Intervention
Morbidity

- Attack Rate: *How Many?*
- Severity: *Level of Care*
- Distribution by Age: 0 – 17, 18 – 64, 65+
- Insured vs General Population: *Impact of Selection?*
Levels of Care

- Three in the Literature
  - Self - Care
  - Outpatient
  - Hospitalization

- Distribution Varies by Scenario

- Additional Level Contemplated in Severe
  - Alternative Care Facility (Overflow)
Waves and Surge Duration

- **Waves**
  - Pandemics have different wave patterns
  - Attack rate is sum of all waves

- **Surge Duration**
  - Like waves, duration varies
  - Will interact with system capacity
  - Conservative (and simplifying) approach is to assume all in one year
Mitigation and Intervention

- **Delay Onset / Reduce Peak**
- **Mitigation**
  - Individual, business and community preparation efforts
  - Challenge in quantifying impact
  - Tale of two cities: Philadelphia vs St Louis
- **Intervention**
  - Anti-virals & vaccines
  - Availability and effectiveness in question
Potential Impact on Providers
Provider Landscape – Hospital

- Private Providers
  - Hospital Chains
  - HMOs
  - Urban vs Rural
  - Profit vs Not-For-Profit

- Public Providers
  - Department of Defense
  - Veterans Administration
  - Indian Health Service
  - Public/Municipal (Local)

- Alternative / Overflow
Provider Assumptions – Hospital

- Capacity Constraints
  - Staffed Beds
  - Average Length of Stay

- Cost Estimate
  - Acute Respiratory Distress Syndrome (ARDS)
  - SARS
  - Drug resistant pneumonia
  - Influenza

- Length of Stay Depends on Scenario
  - *Mid LOS may be longer, cost more than severe*
Displacement

- Every $1 spent on pandemic care crowds out elective care
- Conventional wisdom in a natural disaster is claims go down with little or no “make up”
  - Health infrastructure damaged
  - People busy surviving
- Pandemic tougher to pin down
  - CW is decrease in short term
Hospital Cost

Max (Scenario Hospitalizations, Capacity) \times \text{Average Cost per Stay}

- Displacement
Provider Landscape – Outpatient

- Primary Care
  - Private Practice
  - Physician Hospital Organizations
  - Capitated
  - Salaried

- Home Health Care
  - Nursing
  - Family
Provider Assumptions - Outpatient

- Capacity Constraints
- Cost Estimate
  - Services Provided
  - “Worried Well” vs Sub-Acute
- Access by Payor Type
Alternative Care Facilities – ACF

- Surge Capacity in Severe Scenario
- Every Locale Will Handle Differently
  - Nursing rather than acute care
  - Step down from hospital / convalescent
- No Precedent – How to Model?
  - Assume unbilled rejected by POG
  - Assume average bill between outpatient and hospital rate
Potential Impact on Health Insurers

June, 2008
Payor Landscape

- **Private Payors**
  - Fully Insured
  - Advantage
  - Self Insured
  - MEWAs / PEOs
  - Uninsured

- **Public Payors**
  - Medicare / Medicaid
  - Federal Employee Health Benefits (FEHB)
  - Department of Defense
  - Veterans Administration
  - Indian Health Service
The Nation’s Health Dollar, Calendar Year 2006: Where it Came From

Other Public\(^1\)
12%

Medicaid and SCHIP
15%

Medicare
19%

Other Private\(^2\)
7%

Private Insurance
34%

Out-of-pocket
12%

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\(^1\) Other Public includes programs such as workers’ compensation, public health activity, Department of Defense, Department of Veterans Affairs, Indian Health Service, State and local hospital subsidies and school health.

\(^2\) Other Private includes industrial in-plant, privately funded construction, and non-patient revenues, including philanthropy.

NOTE: Numbers shown may not add to 100.0 because of rounding.

Privately Insured Assumptions

For Each of Major Medical, Advantage & Medigap:

- Insureds (Exposure)
  - Premium
  - Age Distribution
- Reserves
- Reinsurance
- Impact of Taxes
- Capacity (Surplus)
Methodology

- Separate Hospitalization and Outpatient
- Quantify Based on
  - Pandemic Scenario
  - Selection & Mitigation
  - # of Covered Treatments (Access)
  - Treatment Cost Estimates
  - Line of Business Assumptions
- Variables, Vectors, and Multiplication
Due to capacity constraints and sociological factors, a moderate pandemic may be more expensive to health insurers than a severe one.
Other Considerations

- **Cash Flow**
  - Providers
  - Insurers

- **Pricing and Reserving**
  - IBNR
  - Adequacy

- **Renewal Options**
  - Will actuaries be able to sign off?
  - Will companies be able to pull out?

- **Professional and Regulatory Implications**
Self-Insured Plans

- Attempt Similar Methodology
  - No annual statements
  - Reasonable data sources?

- Less rigorous approaches
  - “Sample” plan (10,000 lives) and gross up?

- Reinsurance more important consideration

- Self insurers need to understand extent of risk
Why Self Insured Matters

- What is the Exposure of Business?
- Reinsurance Impact
  - Acute cost likely less than specific
  - Aggregate cover more on smaller groups
- ERM Double - Whammy
  - Business Continuity
  - Cash Flow Issues
  - Supply Chain
Industry Role in Planning & Preparing
Insurance and Pandemic Planning

- Can’t prevent a pandemic
  - Delay onset / reduce peak
  - Increases resources available
  - Beds, doctors, nurses, supplies

- Interests are aligned
  - Good risk management

- Governments strapped for resources

- Goodwill with stakeholders
  - Customers and policymakers!!
Role of the Industry

- Part of system and vested in it
- How do insurers come out as good guys?
  - Partnership beforehand
  - Communication before, during and after
  - Think “investment” not “expense”
- Risk management is our competency
  - Opportunity to expand relationship
  - Added value services
- Partner with Communities, Hospitals, Businesses, and Individuals
Industry Role - Communities

- Participate at local level; get your people involved
  - Health professionals into surge capacity pool
  - Others as leaders in community efforts

- Participate in planning and dress rehearsals
  - Simulations very helpful

- Compare to industry’s public health efforts at the turn of the century

- Presumes preparatory efforts and some degree of competency on part of company
Industry Role - Hospitals

- 12 - 18 month blizzard
  - Top 50 items a hospital needs and how much?
  - Where do you store it?

- World wide nursing shortage
  - Help build, track volunteer workforce
  - Ensure adequate personal protective equipment for surge force

- Billing and cash flow problems
  - “PIP” style interim payments?
Industry Role - Businesses

- Help them prepare
- Communicate with employees
- Do they have special needs, considerations?
- What about self insured?
- Added value ERM consulting opportunity???
Industry Role - Individuals

- Information before, during and after
  - Consistent, accurate messaging
- How to provide home health care
  - May be the most valuable intervention available
- Chronic disease recommendations
- Need 90 day supply of meds
What will Recovery Look Like?

- Nothing comparable in modern era
  - Depression/dustbowl
  - Marshall Plan (but not infrastructure)
  - Great Society (but not a response to events)

- Civil governance challenges
  - What can we learn from Katrina?

- How will public view actors?
  - Government, providers, private insurers
  - If providers fail what will response be?
  - Further consolidation likely
Questions / Comments

Savage Chickens

by Doug Savage

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