Rising Health Care Costs: What’s the Diagnosis?

A Luncheon Briefing presented by the American Academy of Actuaries

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Featured Speakers
John Cookson, FSA, MAAA
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Terminology

- Member
  - Individual covered life (e.g. employee, spouse, child #1, child #2, etc.)

- PMPM
  - Per Member Per Month
  - Standard measure for medical expense analytics

- Health Cost Category
  - Physician, Inpatient, Outpatient, Ancillary, Pharmacy

- Allowed Cost Trend
  - PMPM trend calculation based on
    - total covered services (health plan liability + patient out of pocket)
    - total provider reimbursement for covered services

- Net Trend
  - PMPM trend calculation based on
    - health plan liability only
Terminology

- **Utilization**
  - Changes in the frequency of services being utilized
- **Intensity**
  - Changes in the type of services being utilized
- **Unit Cost**
  - Changes in the cost per service – including intensity.
Components of Health Cost Trend

John Cookson, FSA, MAAA
Health Cost Index

- Developed in late 1980s to track underlying health cost trend pressure
  - Underlying force of trend representing provider revenues
- Adjust out Medicare
  - Non-Medicare force of trend
- Public population-based data sources
  - Proprietary methodology
- Did not want to tie to carrier trends
  - Each one unique
  - Don’t want extraneous factors
Factors Causing Deviation from HCI

- Adverse selection
- Benefit differences
- Mandated benefits
- Statistical fluctuations
- Medicaid and uninsured
- Provider contract arrangements
- Local economic conditions
- HMO/PPO activity
- Durational impacts of underwriting and pre-existing conditions
- Impact of buy-downs on utilization
Total Medicare vs. Health Cost Index™

Health Cost Index is based on a $0 deductible.

Source: Milliman, Inc. CMS: Medicare Trustees Report, Annual Data Interpolated
Health Cost Index vs. Medicare Physician

Health Cost Index is based on a $0 deductible.

Source: Milliman, Inc., CMS: Medicare Trustees Report, Annual Data Interpolated
Health Cost Index vs. Medicare Inpatient

Health Cost Index is based on a $0 deductible.

Source: Milliman, Inc., CMS: Medicare Trustees Report, Annual Data Interpolated
Health Cost Index vs. Medicare Outpatient

Health Cost Index is based on a $0 deductible.

Source: Milliman, Inc., CMS: Medicare Trustees Report, Annual Data Interpolated
## Health Cost Index
### Comparisons to Insured Experience

<table>
<thead>
<tr>
<th>Source of Deviation</th>
<th>Typical Long-Term Average Deviation Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remove Medicaid and Uninsured</td>
<td>.5 to 1%</td>
</tr>
<tr>
<td>Reimbursement Controls</td>
<td>-1 to 3%</td>
</tr>
<tr>
<td>Legislative/Regulatory Change</td>
<td>-1 to 2%</td>
</tr>
<tr>
<td>Adverse Selection</td>
<td>0 to 5%</td>
</tr>
<tr>
<td>Benefit Differences</td>
<td>-.5 to 3%</td>
</tr>
<tr>
<td>Mandated Benefits</td>
<td>0 to 1%</td>
</tr>
<tr>
<td>Utilization Impact of Benefit Downgrades</td>
<td>.2 to 1%</td>
</tr>
<tr>
<td>Typical Average Range</td>
<td>1 to 6%</td>
</tr>
</tbody>
</table>

Source: Milliman, Inc.
Employment Cost Index (HI) vs. Health Cost Index

Health Cost Index is based on a $250 deductible.

Health Cost Index (HCI) Deductible Leverage

Source: Milliman, Inc.
HCI - Prescription Drug Copay Leverage

Full coverage of benefits assumed
($0 Deductible and No Out of Pocket Maximum)
# Out-of-Pocket Care Expenditures* and GDP

<table>
<thead>
<tr>
<th>Year</th>
<th>Out-of-Pocket as a % of Personal HC</th>
<th>Out-of-Pocket as a % of GDP</th>
<th>Total Healthcare as a % of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1930</td>
<td>87.5</td>
<td>3.0</td>
<td>3.9</td>
</tr>
<tr>
<td>1940</td>
<td>81.1</td>
<td>2.8</td>
<td>3.9</td>
</tr>
<tr>
<td>1950</td>
<td>65.5</td>
<td>2.4</td>
<td>4.3</td>
</tr>
<tr>
<td>1960</td>
<td>55.2</td>
<td>2.5</td>
<td>5.1</td>
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<tr>
<td>1970</td>
<td>39.7</td>
<td>2.4</td>
<td>7.0</td>
</tr>
<tr>
<td>1980</td>
<td>27.1</td>
<td>2.1</td>
<td>8.8</td>
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<tr>
<td>1990</td>
<td>22.5</td>
<td>2.4</td>
<td>12.0</td>
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<td>1995</td>
<td>16.9</td>
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<td>2000</td>
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<td>1.9</td>
<td>13.3</td>
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<td>16.4</td>
<td>1.9</td>
<td>14.1</td>
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<tr>
<td>2002</td>
<td>16.0</td>
<td>2.0</td>
<td>14.2</td>
</tr>
<tr>
<td>2003</td>
<td>16.0</td>
<td>2.0</td>
<td>14.3</td>
</tr>
</tbody>
</table>

* Excluding subscriber direct premiums
Factors Contributing to Rising Health Care Costs

Lisa Tourville, ASA, MAAA
Descriptors and Sources

- Trend statistics included in this presentation are based on a national, commercial, fully-insured population
- Most recent 5 years of trends were studied
- Annualized values were derived from the historical data
- Sources of information include
  - Proprietary detailed claim databases
  - Companies quarterly earnings conference calls
  - Reden & Anders and Ingenix trend-related research study efforts and products.
Allowed Cost Trend

- Estimated annualized trend over the past 5 years = 12%
  - Commercial (private payer), Fully-Insured

- High level break-outs include
  - Unit cost trend – includes intensity – 8%
    - Physician cost per procedure or cost per visit
    - Inpatient cost per day or cost per admit
    - Outpatient cost per visit or cost per procedure
    - Pharmacy cost per script or cost per days supply
  - Utilization trend – 4%
    - Physician procedures per 1,000 or visits per 1,000
    - Inpatient days per 1,000 or admit per 1,000
    - Outpatient visits per 1,000 or procedures per 1,000
    - Pharmacy scripts per 1,000 or days supply
Factors Affecting Allowed Cost Trend

- **Unit Cost Trend**
  - Demographics
  - Emerging Technologies (medical and pharmaceutical)
  - Drugs – Generic Introductions & Over-the-counter
  - Mandated Benefits
  - Medical Price Inflation
  - Baseline or Mix-Adjusted Intensity
    - Adjusted for the mix factors identified above

- **Utilization Trend**
  - Demographics
  - Emerging Technologies (medical and pharmaceutical)
  - Drugs – Generic Introductions & Over-the-counter
  - Mandated Benefits
  - Calendar make-up
  - Baseline or Mix-Adjusted Utilization
    - Adjusted for the mix factors identified above
Demographic Mix

- Aging of the population
- Annual impact on trend is approximately +1.0%
- There will continue to be an impact on trend due to changing demographic mix until the population pyramid reaches a steady state

![Demographic Mix Diagram](image-url)
Emerging Technologies

- Annualized impact on trend is approximately +2.0%
  - Can vary significantly from year to year
- Examples
  - New diagnostic tests – e.g., DNA HPV pap smear
  - New treatments – e.g., Wet Macular Degeneration
  - New devices – e.g., ICD’s, Implantable Gastric Stimulator
  - Changes in medical and pharmacy guidelines - e.g., New Cholesterol Guidelines
  - Changes in FDA status – e.g., Vioxx, Bextra
  - New medications – e.g., Symlin, Zetia, Ventavis, Exubera
- Costs can be managed
  - Medical coverage policy set to include technologies where therapeutic advantage has been proven
  - Develop medical management programs to manage use
Change in Status of Drugs
Generic Introductions and OTC

- Annualized impact on trend is approximately -0.5%
  - Can vary significantly from year to year
- Examples
  - Brand name patent expirations, e.g.,
    - Wellbutrin
    - Zocor
    - Neurontin
    - Allegra
  - Move from prescription to over-the-counter, e.g.,
    - Claritin
    - Prilosec
- Favorable cost impact can be maximized by tier management and manufacturer rebate negotiations
Change in Status of Drugs
OTC – Example of Managing Costs

A drug goes over the counter. In tiered plans, Brand #1 is placed in Tier 3 and Brand #2 is placed in Tier 2.
Change in Status of Drugs –
Generic Introduction - Example

A generic equivalent is introduced to the market. Total scripts reduce slightly. Overall costs decrease significantly.
Calendar Year Make-up

- Medical costs vary by day of the week and on holidays
- Tracking trend from one quarter to the next and one year over another could be affected by the calendar year make-up
- Long-term annualized impact on trend is zero
- Annual impact can be +/- 0.5%
- Quarterly impact can be +/- 2.0%
Mandated Benefits

- Legislation affecting medical costs
- Annualized impact on trend is approximately +0.5% nationally
  - Can vary significantly by state
- Example:
  - July 1, 2003: Colorado eliminates No Fault auto insurance and joins the majority of other states (37) already under the tort system
  - Pertinence to medical insurance
    - Under the no fault system, additional premiums were collected under the auto insurance program to cover medical expenses resulting from injuries obtained in an automobile accident
    - Under the tort system, if the at-fault driver has no insurance, the injured person would still be able to access his or her own health insurance for medical care coverage
  - Estimated impact to medical expenses = +2.0%
Medical Price Inflation

- Changes in the “price” of services being utilized
- Annual price inflation is approximately +6.0% and is made up of
  - General Inflation – estimated at +2.5% per year
  - Medical Inflation (adjustments in additional to general inflation) - estimated at +3.5% per year
    - Includes approximately +2.0% for
      - Provisions for provider medical malpractice insurance
      - Nursing shortages
      - Other
    - And 1.5% for
      - Provider negotiating power
      - Hospital consolidation – changes in marketshare
      - Other
- Has proven to be the largest component of trend and the most difficult to manage
Baseline Utilization

- Changes in the frequency of services being utilized
- Annual impact on trend is approximately +2.0% and is made up of
  - Changes in patient behavior
    - Consumer Demand – Advertising, etc.
    - Economic conditions
    - Lifestyle
    - Tolerance
    - Driven by changes in benefit plan design
  - Changes in provider behavior
    - Providing services previously outsourced
    - Defensive medicine
  - Environmental Conditions (e.g. flu season / availability of flu shots; hurricanes and other disasters)
  - Medical management programs / Managed care guidelines – Loosening or tightening
- Portions are manageable through medical management programs, patient education and provider counseling
Consumer Demand - Example
Colonoscopies per 1,000

0 10 20 30 40 50

2002
2001
2000
1999

March, 2002: Katie Couric has a colonoscopy on national Television

Procedures per 1000
Baseline Intensity

- Changes in the type of services being utilized
  - Example: MRI’s instead of X-Rays

- Annual impact on trend is approximately +1.0% and is made up of
  - Changes in patient behavior
    - Consumer Demand – Advertising, etc.
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Patient behavior – Example
Morbid Obesity Admits per 1,000

While this example is measurable, changes in patient behavior is generally very difficult to quantify.
Allowed Cost Trend Summary
Additional Factors to Consider

- Health Plan or Population-Specific Factors
  - Geographic Mix
  - Underwriting Wear-Off
  - Product Mix
  - Large Customer or Industry Mix
  - Changes in internal policy or processes impacting claim payment calculations

- Translation from Allowed Cost Trend to Net Trend
  - Benefit Plan Changes (change in out-of-pocket expenses)
  - Leveraging
Net Trend – Benefit Plan Changes

- Benefit Plan Changes
  - Annual impact on trend is approximately -2.0%
  - Changes to the structure and levels of out-of-pocket expenses (i.e. patient liability)
    - Office co-pays
    - Inpatient deductibles
    - Maternity deductibles
    - Emergency Room Co-pay’s
    - Tiered drug co-pay’s
    - Consumer driven health plans
    - Other
Net Trend - Leveraging

- Leveraging
  - Annual impact on trend varies significantly by health cost category and fixed copay structure. In recent years, it has varied between 0.5% and 1.5%
  - The impact/relationship of fixed costs (deductibles & copays) to changing aggregate health care costs
  - The greater the fixed costs as compared to total costs – the greater the impact of leveraging as these fixed costs grow
    - Pharmacy significantly impacted
    - Pay special attention to recent large deductible plans
Net Trend - Leveraging

- Leveraging Example
  - Year 1:
    - Total Allowed health care costs = $100;
    - Copay/Patient liability = $10;
    - Net costs/Health Plan liability = $90.
  - Year 2:
    - Total Allowed health care costs = $115;
    - Copay/Patient liability = $10;
    - Net costs/Health Plan liability = $105.
  - Trends:
    - Allowed ($115/$100) = 15%;
    - Benefit Plan Change ($10-$10)/$100 = 0.0%;
    - Net ($105/$90) = 16.7%
  - Leveraging = ((1.15 / 1.167)-1) = 1.4%
Summary

- Allowed medical trends have been in the double digits for 5+ consecutive years
- #1 driver is medical price component
- Cost management efforts have included
  - increasing patient responsibility (out of pocket expenses) and
  - re-introduce medical management programs that were reduced or eliminated in the early 2000’s
- High Deductible and Consumer Driven Health Plans are expected to reduce aggregate medical expenses by encouraging the patient to participate in the decision making process
- Alternatives to cost management are continually being investigated such as provider pay-for-performance
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Q & A
Rising Health Care Costs: What’s the Diagnosis?

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