Evaluating Disease Management Programs

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Top 38 Commercial Health Insurance Companies - 1989

Aetna, Alexander Hamilton, Allstate, Banker's Life & Casualty, CNA, Colonial Penn, Confederation, Connecticut General, Crown Life, Employers Health, Equitable, General American, Great West, Guardian, Hartford, INA, Jefferson Pilot, John Hancock, Liberty Mutual, Lincoln National, Mass Mutual, Metropolitan, Mutual Benefit, Mutual Life Of New York, Mutual Of Omaha, New England, New York Life, Pacific Mutual, Provident Life & Accident, Prudential, Republic National, Sentry, State Mutual, Sun Life, Transamerica Occidental, Travelers, Union Labor, UNUM

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Commercial Health Insurance Companies - Change

- From 1971 to 1989
  - Relatively little change in largest carriers
- From 1989 to 2004
  - Many changes in largest carriers
- What happened?

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Commercial Health Insurance Companies - Change

- Managed Care, especially HMO’s, arrived
- Paradigm for medical coverage changed
- Some companies built or bought the needed infrastructure to survive
- Many companies were unable to compete and either sold out or stopped selling medical coverage

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Important Points

- Change does not always happen smoothly
- Being huge does not protect you
- The world is changing even for actuaries
- Even if your company is “merely” bought, impact on the actuaries often isn’t good

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Potential Paradigm Change

- Cost of medical care per person:
  - % of people with an illness or injury
  - # of services or products per sick person
  - Intensity of services or products provided
  - Cost per intensity of service or product
  - All multiplied and added together
- Decreases in one factor often lead to increases in another

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Potential Paradigm Change

- Historically carriers:
  - Tried to keep people well (wellness)
  - Reduced days in hospital (U.R.)
  - Moved surgeries from Inpatient to Outpatient
  - Negotiated prices
- Each process was often managed separately from the other.
- Disease Management manages in total!

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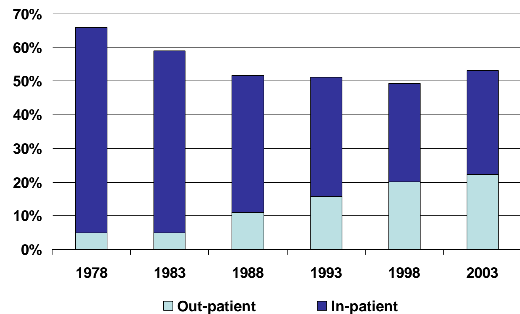

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Disease Management

- DM seeks to manage all cost components as a whole
- Focuses on only one disease process
- Generally chronic conditions
- Follows patient over several years
- Willing to increase one component if the net result is lowering the total cost

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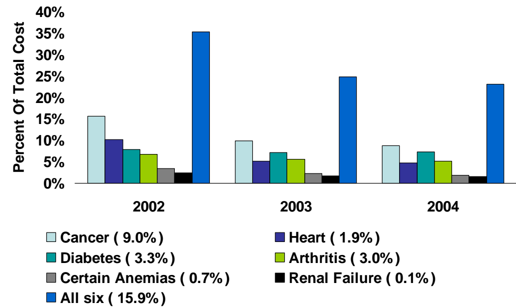

Number in parentheses is percent of insureds with chronic condition in 2002.

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Why Manage Chronic Conditions?

- For people **<u>diagnosed in 2002</u>** as chronic:
  - 35.2% of total cost in 2002 is the excess cost of these people
  - 24.8% of total cost in 2003 is the excess cost of these same people
  - 23.1% of total cost in 2004 is the excess cost of these same people
- Large database: $6 Billion in claims on people insured for all three years

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Evaluating Disease Management

- If DM has such a large potential, why not just go for it?
  - 1. Cost of DM is not small
  - 2. Not all DM produces positive results
  - 3. Regression to the mean makes many DM programs look better than they are
  - 4. DM can be intrusive, even dangerous
  - 5. Credible DM results need huge datasets

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How **Not** To Evaluate DM

Identify people in 2002

- Assume DM was applied during 2003
- Per every $100 of claims
  - Chronic people cost $286.18 in 2002
  - Same chronic people cost $265.85 in 2003
  - Assuming 15% trend, we "saved" $63.26 each
  - Saved costs on 15.9% of members
- Overall plan savings is 8.7% !!!!!!

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How **Not** To Evaluate DM

- If anyone wants to purchase this incredible disease management program,
- I'm willing to implement it for only 50% of the net calculated savings after trend
- The program is very easy to implement since I actually do nothing
- Regression to the mean does all the work
- Note: Regression patterns are different for different chronic conditions. (Diabetes went up!)

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How **Not** To Evaluate DM

- Even so, plans might be willing to pay percent of savings based on current diagnoses or other simple mechanism
- Since the cost for various diseases will tend to move randomly, some plans will show "savings" in some years
- Many DM programs could be funded on such "savings"
- After a few such "savings", plans might decide to ignore all DM programs

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Evaluating Disease Management

- **Randomized Control Trials**
- Gold Standard In DM Evaluation
  - Most accurate methodology
  - Mirrors protocols for medical treatment evaluation
  - Random assignment by patient to
    - DM program
    - Not in DM program
  - Double blind – patients and researchers don't know who was assigned to DM
  - Very difficult to implement in real world

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- Issues with **Randomized Control Trials**
  - If DM plan is known to be better treatment, then assigning a patient to a lower quality treatment is unethical
  - Since it is implemented at the patient level, all providers must cooperate
  - Providers do not like to give different treatments to patients with identical conditions even if treatments aren't known to be better

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Evaluating Disease Management

- Alternatives to randomized control trials
  - Apply DM to everyone in a **specific location** and compare results to a different location
  - Issue: different local treatments and cost increases make it more difficult to be certain differences aren't random
  - Example, % of false positive diagnoses varies by location

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Evaluating Disease Management

- Alternatives to randomized control trials
  - Apply DM only through **specific providers**
  - Issue: Any results from DM will be heavily masked by provider's practice pattern for that condition and relative severity of patients going to these providers
  - Example, providers most willing to implement new protocols might be currently using poor quality protocols and wanting to upgrade

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Evaluating Disease Management

- Alternatives to randomized control trials
  - Apply the DM program only to **employer groups** that select program
  - Issue: Groups tend to self-select. Those who just had high costs for a condition would be most willing to select program
  - Example, group's costs for cancer randomly jumped last year and therefore opts in. Costs drop back to normal in the following year

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Evaluating Disease Management

- Other possible approaches:
  - Looking for "discontinuities" in costs
  - Comparing to external benchmarks
  - Comparing to prior cost trended forward
  - Comparing to other health plans
  - Risk adjusting groups with and without DM

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DM Evaluation Issues

What determines when a person has a chronic condition?

- Example, is someone diabetic
  - If their fasting blood sugar was over 240?
  - If their Ha1C was over 9.0?
  - How many re-testings are needed to verify?
  - Is a diabetic a "diabetic" if they're under treatment and their blood sugar is normal?
- If you are using claims data, can you exclude diagnoses from test procedures?

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DM Evaluation Issues

- How do you separate
  - Alpha Thalassanemia (ICD9 282.4), from
  - Beta Thalassanemia (ICD9 282.4)?
- Alpha is very serious, extremely expensive, usually fatal, but quite rare
- Beta varies widely in severity, varies widely in cost, and is fairly common

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DM Evaluation Issues

- Some other complicating issues:
  - Membership turnover, new people who have had the condition for a long time and people with the condition that leave
  - Deaths (don't count these as cost savings)
  - Severity levels of people in DM program
  - Trend for costs
  - False positive diagnoses

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Simple DM Evaluation Approach

- Identify people in year 1 with condition,
- Measure their total excess cost in year 2
- Example, costs in year 2
  - 10 chronic people costing $190 each
  - 90 non-chronic people costing $90 each
  - 100 people in costing $10,000 in total
  - Excess cost is $100 for 10 people = $1,000
  - Total excess cost is 10.0%

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Simple DM Evaluation Approach

- Now identify people in year 2 with chronic condition. This will include some overlap from year 1, but will not be identical.
- Use the same identification protocol
- Compare
  - % excess cost in year 3 to
  - % excess cost in year 2

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Simple DM Evaluation Approach

- What if 10 people are falsely identified as chronic
  - 10 chronic people costing $190 each
  - 10 false chronic people costing $90 each
  - Net: 20 "chronic" people costing $140 each
  - 80 non-chronic people costing $90 each
  - 100 people in costing $10,000 in total
  - Excess cost is $50 for 20 people = $1,000
  - Total excess cost is 10.0%

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Simple DM Evaluation Approach

- All chronic costs compared to other costs in same year, hence assuming trend is uniform
- Since all chronic people are put together, severity level is less relevant
- Deaths, turnover, new entrants are accepted as a natural part of risk
- If you couldn't get people in DM program, then you have no savings for these people

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Where Will You Be In 10 Years?

- DM offers a promise of giving health plans a critical competitive advantage in cost
- DM is difficult to evaluate accurately
- Some DM “savings” are no savings at all
- Based on history, many carriers won’t invest in evaluating DM programs
- **If DM works**, based on history, many carriers won’t survive the next decade

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- “Disease Management Program Evaluation Guide©”
- Published by Disease Management Association of America (DMAA)
- DMAA also publishes a dictionary of terms
- Covers in more depth many of the issues and approaches in this presentation
- “Simple” approach is not covered

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