Health Care Planning Decisions

A Simulation Approach

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Nationwide Healthcare Cost Impact

- **Health Insurance Costs**
- **Other Costs**

**Time**

[Graph showing the increase in health insurance costs and other costs over time.]
Agenda

- Tradeoffs
- Model Characterization
- Decisions to be made
- Decision criteria
- Findings
Find Best Decision Given Tradeoffs

Lower healthcare costs vs. Happier, more loyal workforce
Model Characterization

- Healthcare costs data
  - Agency for Healthcare Research and Quality
  - Kaiser Family Foundation
  - Town records

- Salary data
  - Massachusetts Department of Elementary and Secondary Education – Average Teacher Salaries

- Employee Loss Function: inverse normal probability distribution function
Employee Loss Function

Region’s total compensation distribution

\[ x = \text{Town total compensation} \]

\[ 1 - P(x \leq X) \]
Decisions

- High-cost plan, low-cost plan, both, ...
- Both with option to drop high-cost!
  - Drop when adoption of low-cost at a threshold percentage
Decision criteria

- 6-year NPV of (total compensation + cost of rehiring)
  - Mean
  - 5%
  - 95%
- Total employees lost
Findings

- Sensitive to indefinite assumptions!
  - Cost to rehire
  - Employee loss function

- Could get best decision to vary along entire spectrum
  - Only use low-cost option
  - Offer both plans from now until eternity
  - Offer both plans from now until 0-100% of employees have switched to low-cost plan

- But...
  - Option never got in the way and sometimes was useful!
What was the point?
Questions?