What is Wrong with the Current "Standard" DM Evaluation Model?

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Background (1)

- DM is promoted as a medical cost-savings mechanism with reported ROI's of up to 8:1 using the "Industry Standard Evaluation Design"
- Conversely, the CBO and other literature reviews have not found sufficient evidence to conclude that DM programs can generally reduce the overall cost of health care services

Background (2)

- Additionally, two DM programs have recently pulled out of Medicare's tightly controlled Demonstration Projects and a third has consistently missed financial targets.
- Rather than investing in efforts to prove that DM is indeed economically effective, the DMAA "Outcomes Guidelines Report" is nothing more than an endorsement of status quo

The Sales Pitch!

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Statement/Question

- No two programs are alike (populations managed, payers, local practice patterns, interventions, etc.,) and thus evaluations cannot and should not be "standardized".
- As an industry, do we really want to promote an evaluation method that clearly benefits the vendor over the purchaser?

Purpose of this Presentation

1. To illustrate how the population-based pre-post evaluation design elicits financial results generally in favor of the DM program
2. To describe how the industry defends the practice of using a flawed evaluation approach, and
3. Provide examples of how alternative methods achieve different results

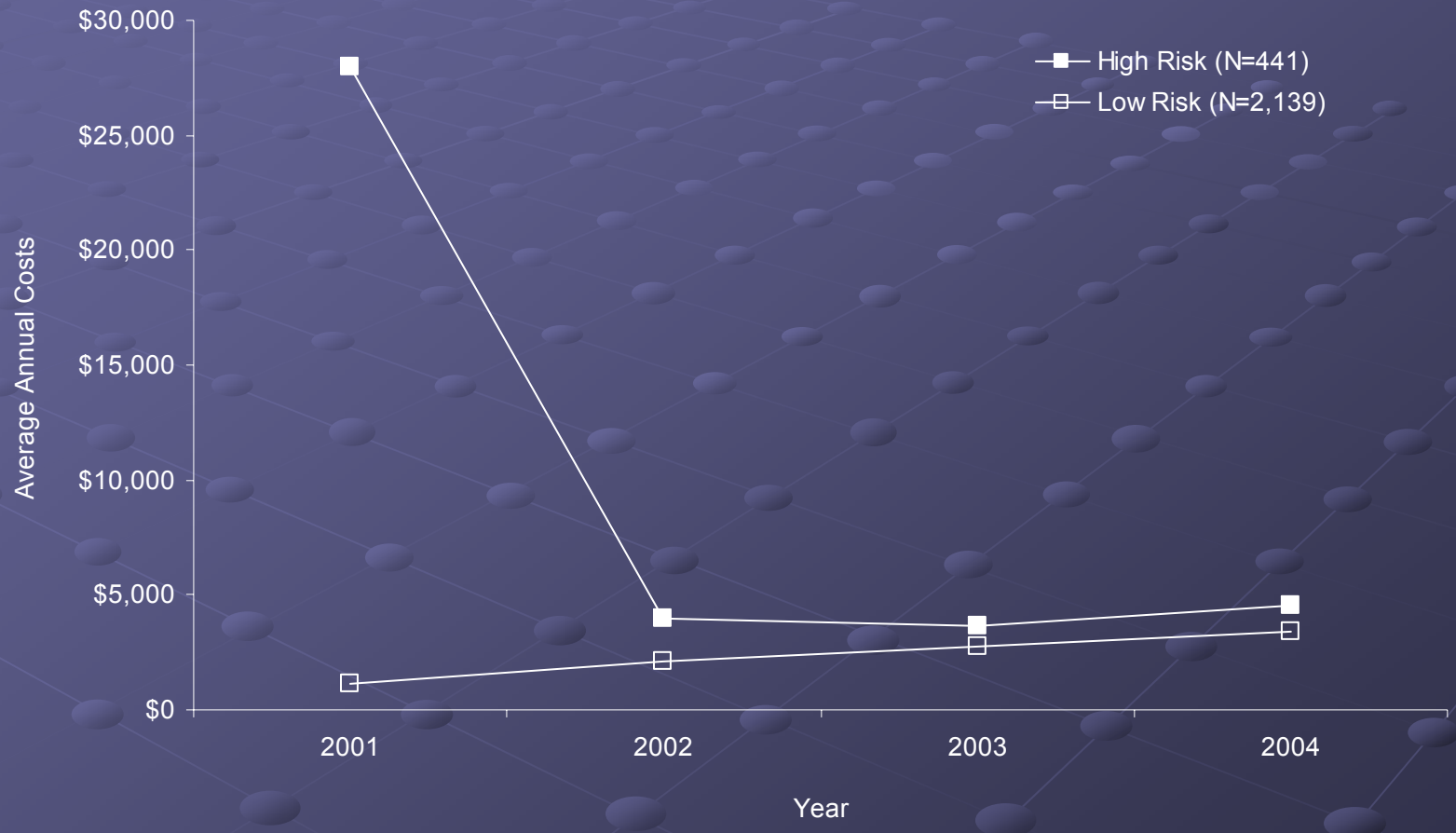
Elements of the Current Model

- Pre-post design (program year minus baseline year) with no control group
- Per-member-per-month (pmpm) cost is the primary outcome measure
- A "cost trend" for the non-chronic population is used for predicting where costs would be, absent the program

Argument 1: Measurement at the population level eliminates RTM

- Identifying people using claims data will overestimate costs in baseline year (disproportionate number of high costing cases, inability to identify "unknown" cases)
- These same people will have decreased costs in the next year

RTM In A Cohort



RTM In A Population

Case-mix Category (members)	Mean
(1) Admitted in Year 1 and in Year 2 (“high risk”)	6.4%
(2) Not Admitted in Year 1 and admitted in Year 2 (“low risk”)	62.4%
(3) Members "undetected" in Year 1and admitted in Year 2	10.0%
(4) New Members in Year 2 and admitted in Year 2	21.2%

Diseases covered: asthma, CAD, CHF, diabetes

Continuous enrollment in both years ≈ 65%

Argument 2: "Spill-over" effect is captured at population level

- Physicians will apply changes in their practice patterns (as a result of DM) across all their patients and this will lead to cost savings across the entire population.
- However, external factors can easily explain changes that occur at the population level, AND there is no literature on the "spillover" effect!

External Factors Impacting a Population

HEDIS EFFECTIVENESS OF CARE MEASURES

SELECT TRENDS, 2003 - 2005

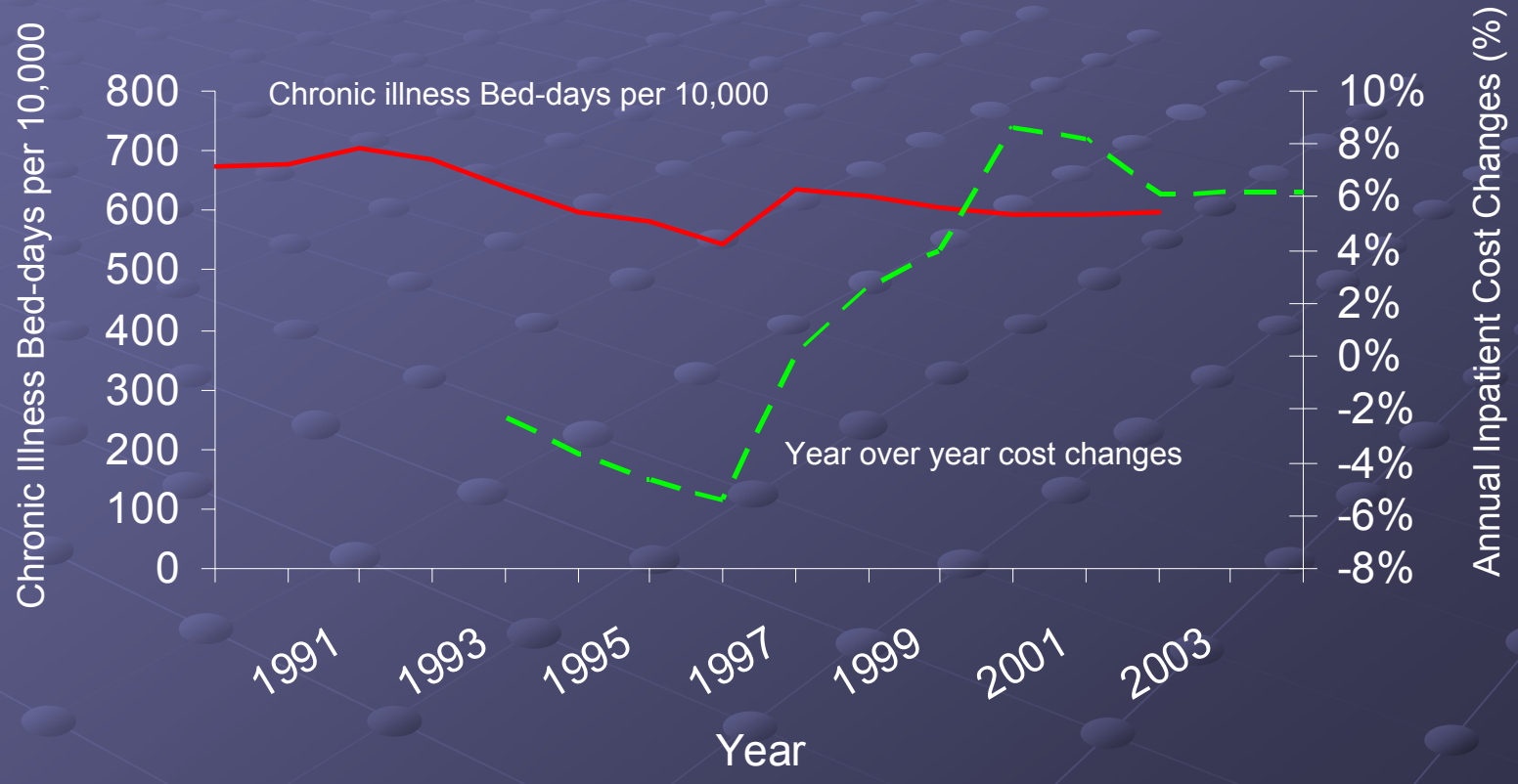
Commercial Averages	2003	2004	2005
Controlling High Blood Pressure	62.2	66.8	68.8
Beta blocker after AMI	69.8	72.5	77.7
Diabetes: HbA1c Testing	84.6	86.5	87.5
Diabetes: Lipid Control (<100 mg/dL)	34.7	40.2	43.8
Medical Assistance with Smoking Cessation	68.6	69.6	71.2

Medicare Averages	2003	2004	2005
Controlling High Blood Pressure	61.4	64.6	66.4
Beta blocker after AMI	92.9	94	93.8
Diabetes: HbA1c Testing	87.9	89.1	88.9
Diabetes: Lipid Control (<100 mg/dL)	41.9	47.5	50
Medical Assistance with Smoking Cessation	63.3	64.7	75.5

Argument 3: Cost should be the primary outcome measure

- Total Cost = utilization X unit price
- DM can impact utilization, but not unit pricing

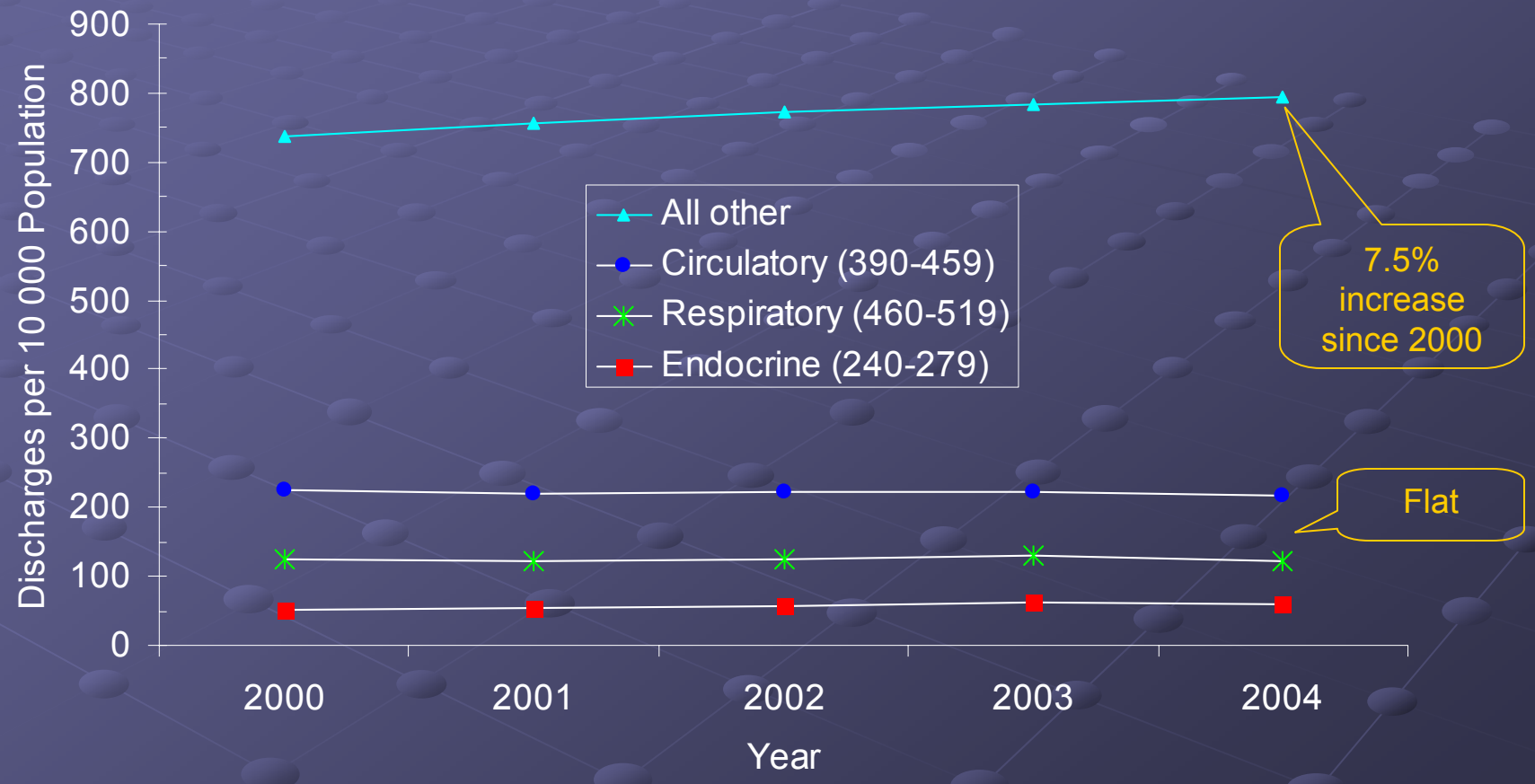
Inpatient Cost Trends



Argument 4: Cost should be compared to "non-chronic trend"

- A "trend" based on cost will always be biased upward by surging unit prices
- A "trend" based on utilization will most likely be flat
- A "trend" based on the non-chronically ill population may be higher
- Using only 2 data points introduces bias

Comparison of “trends”



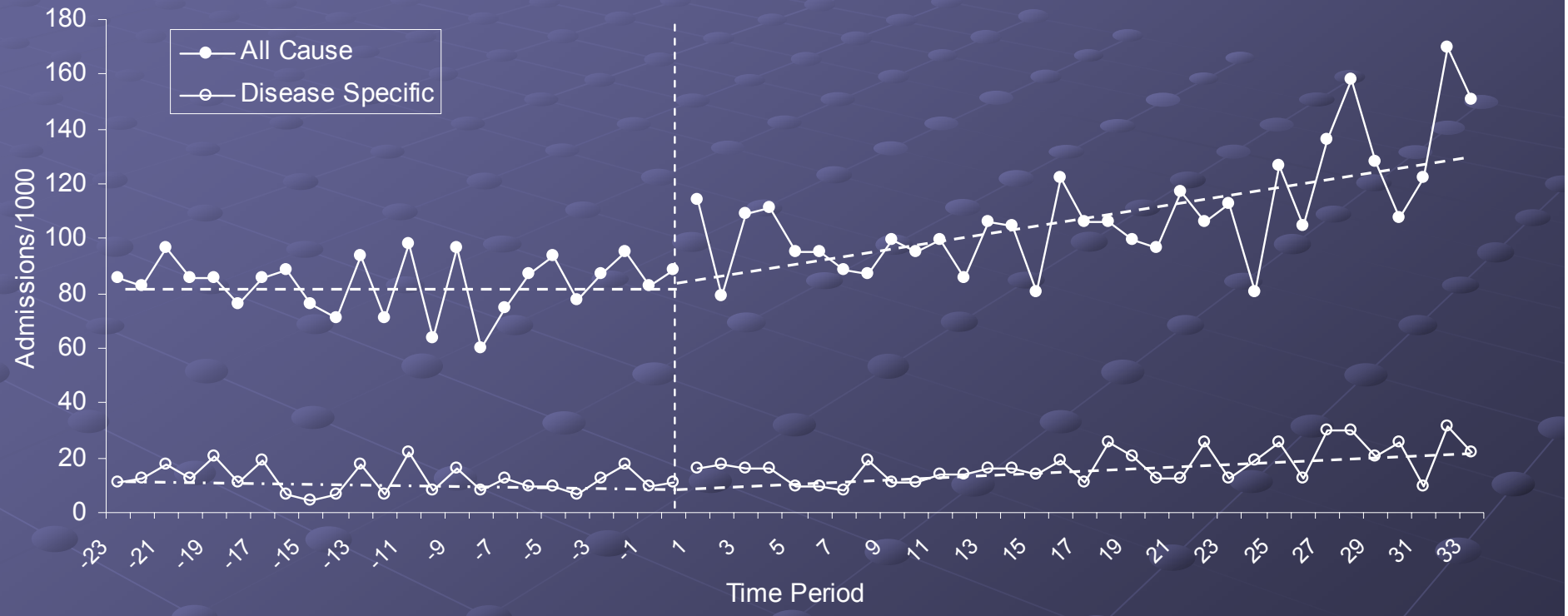
Argument 5: A comparison group that is both equivalent and concurrent may not be available in applied settings

- If the total population was not used as the measurement unit, a concurrent control group would be available
- Historic controls can be equivalent on utilization and quality measures
- Many robust evaluation designs have been applied to DM

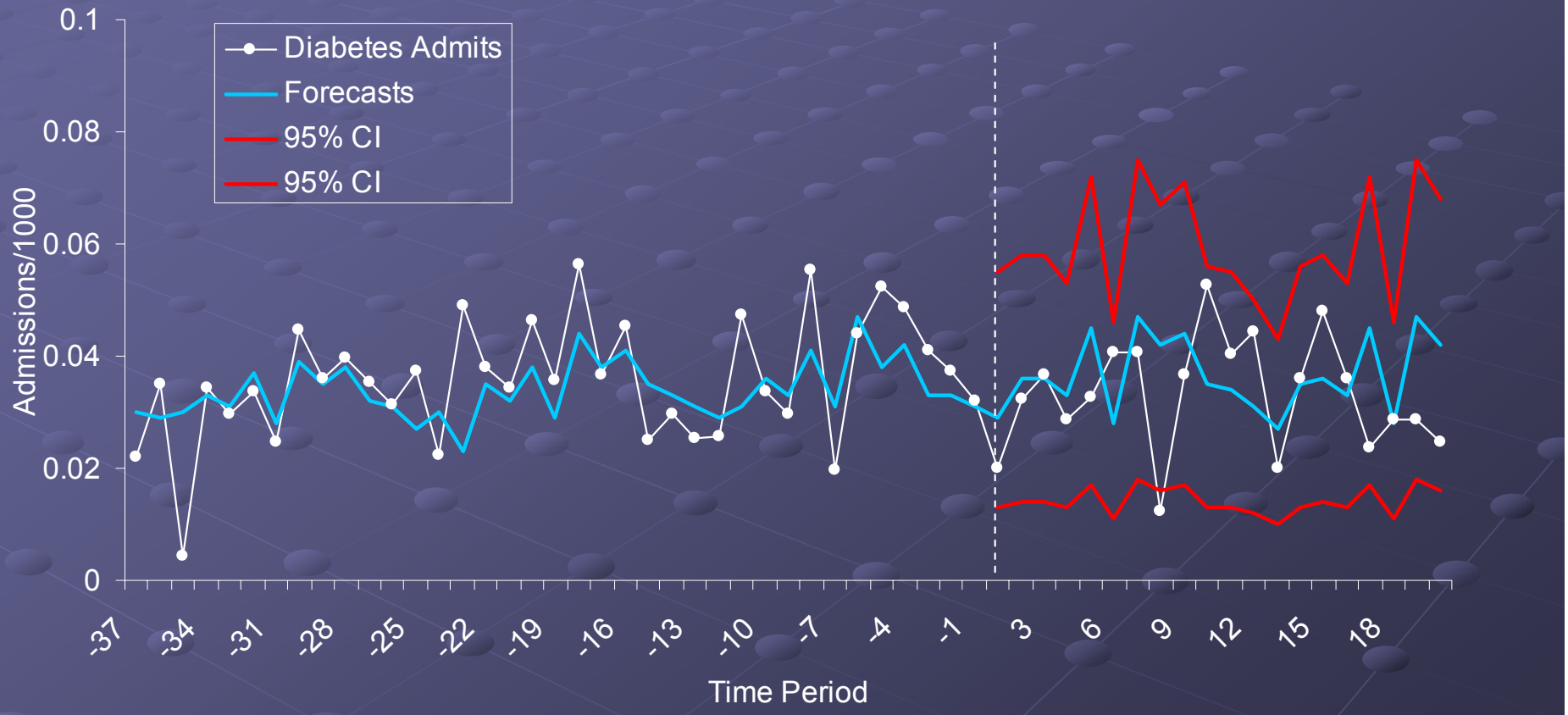
Real Examples

- The following analyses represent REAL cases in which alternative methods were used to test claims of large ROIs made by vendors.

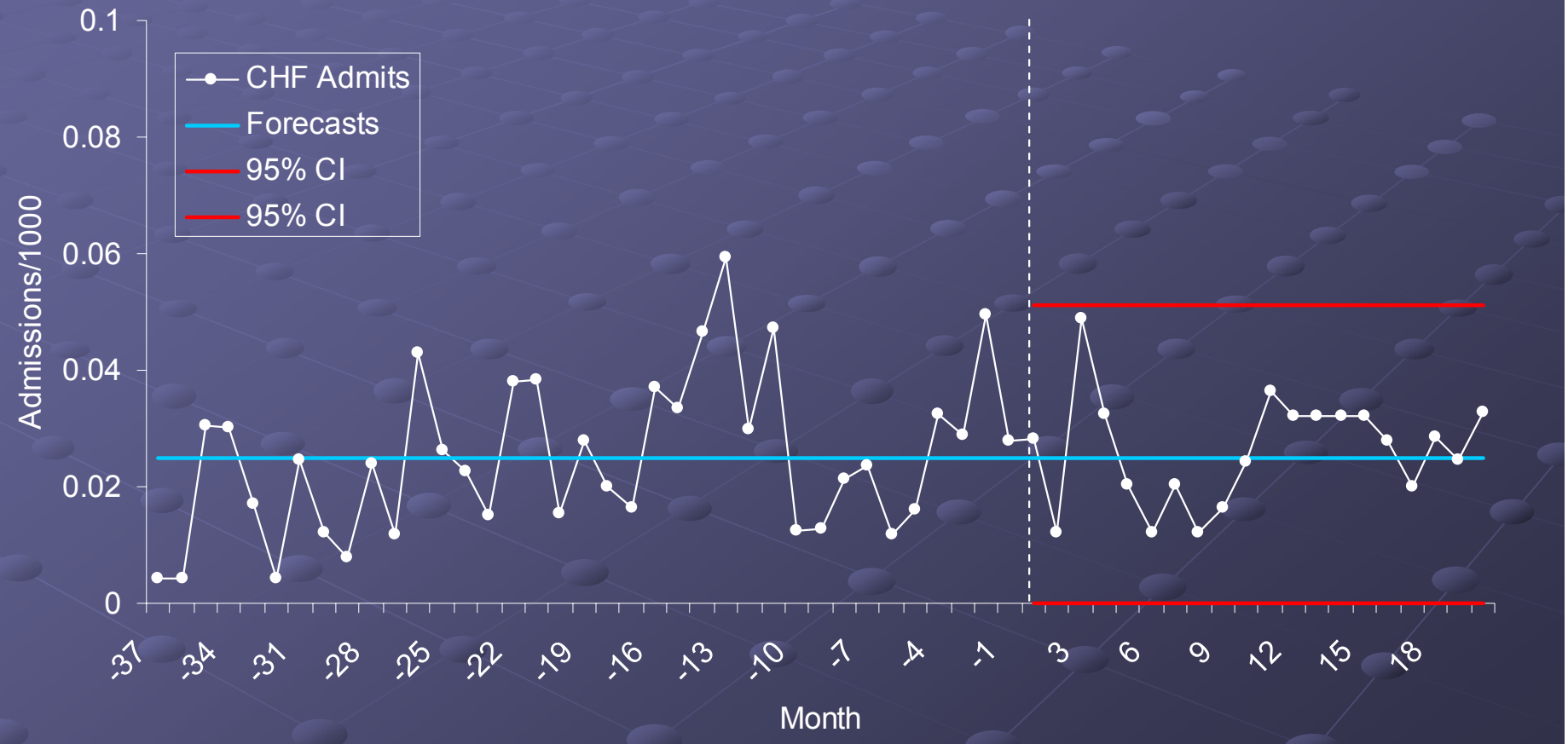
Example 1 - Time Series Analysis



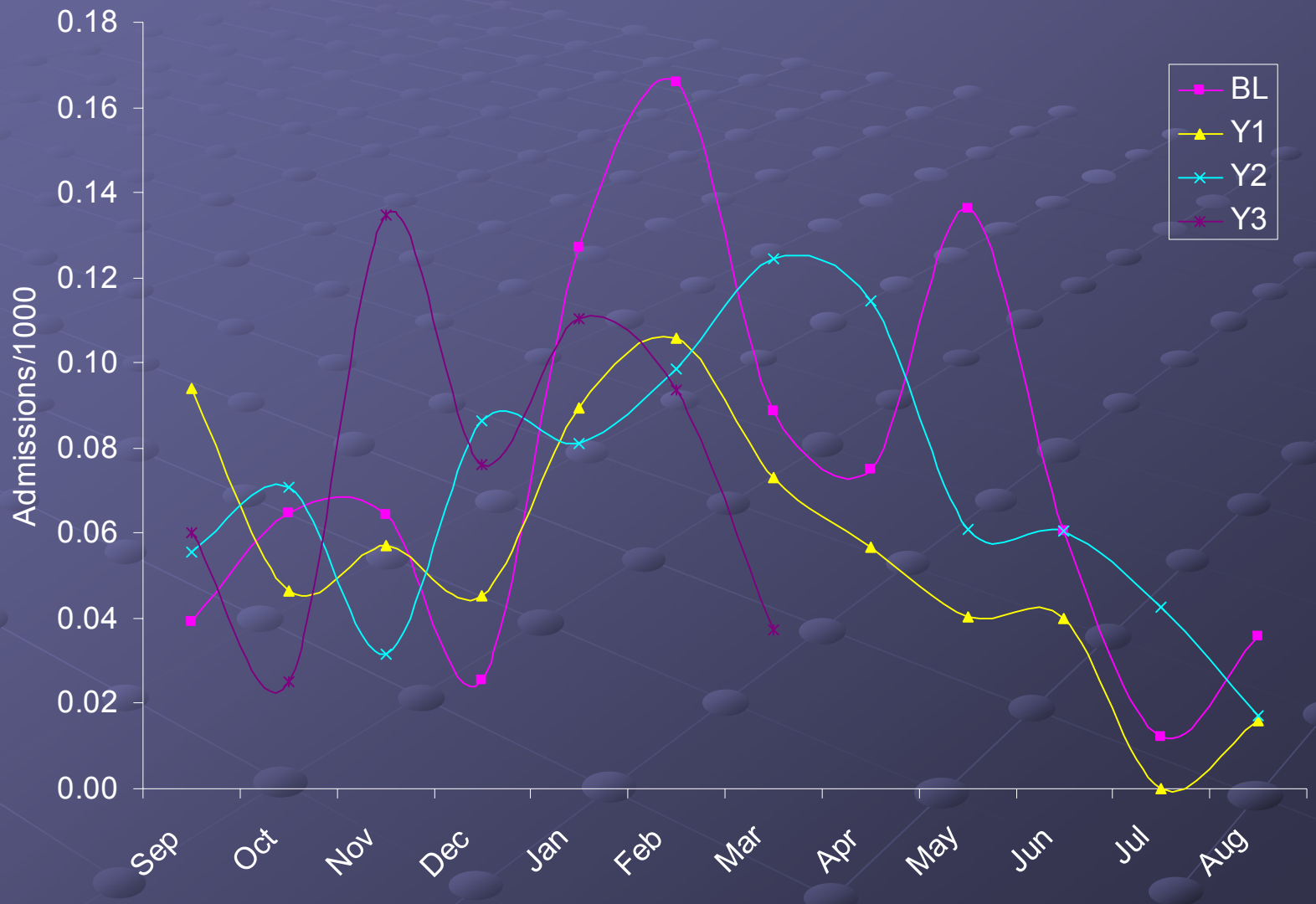
Example 2 - Time Series Analysis



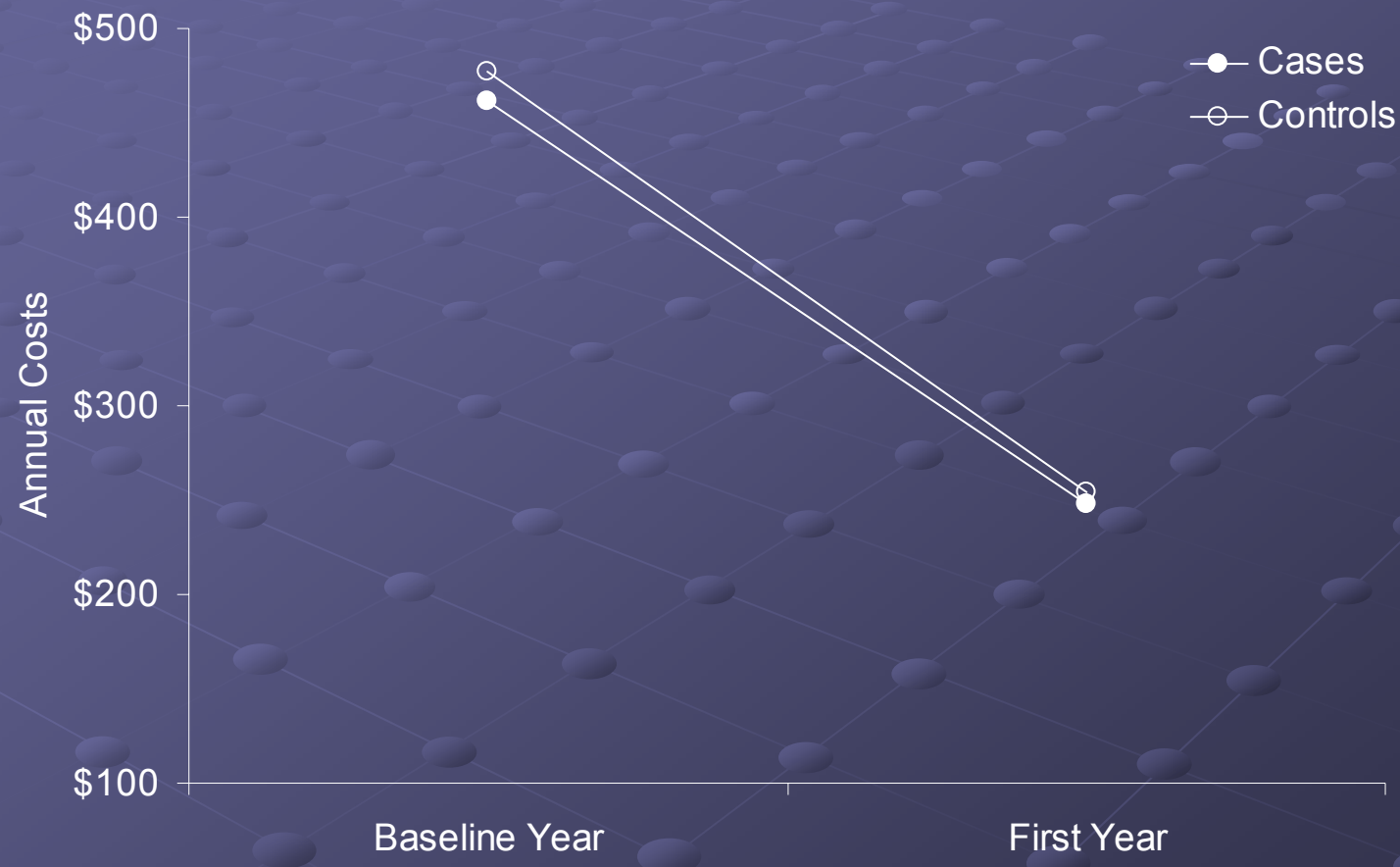
Example 2 - Time Series Analysis



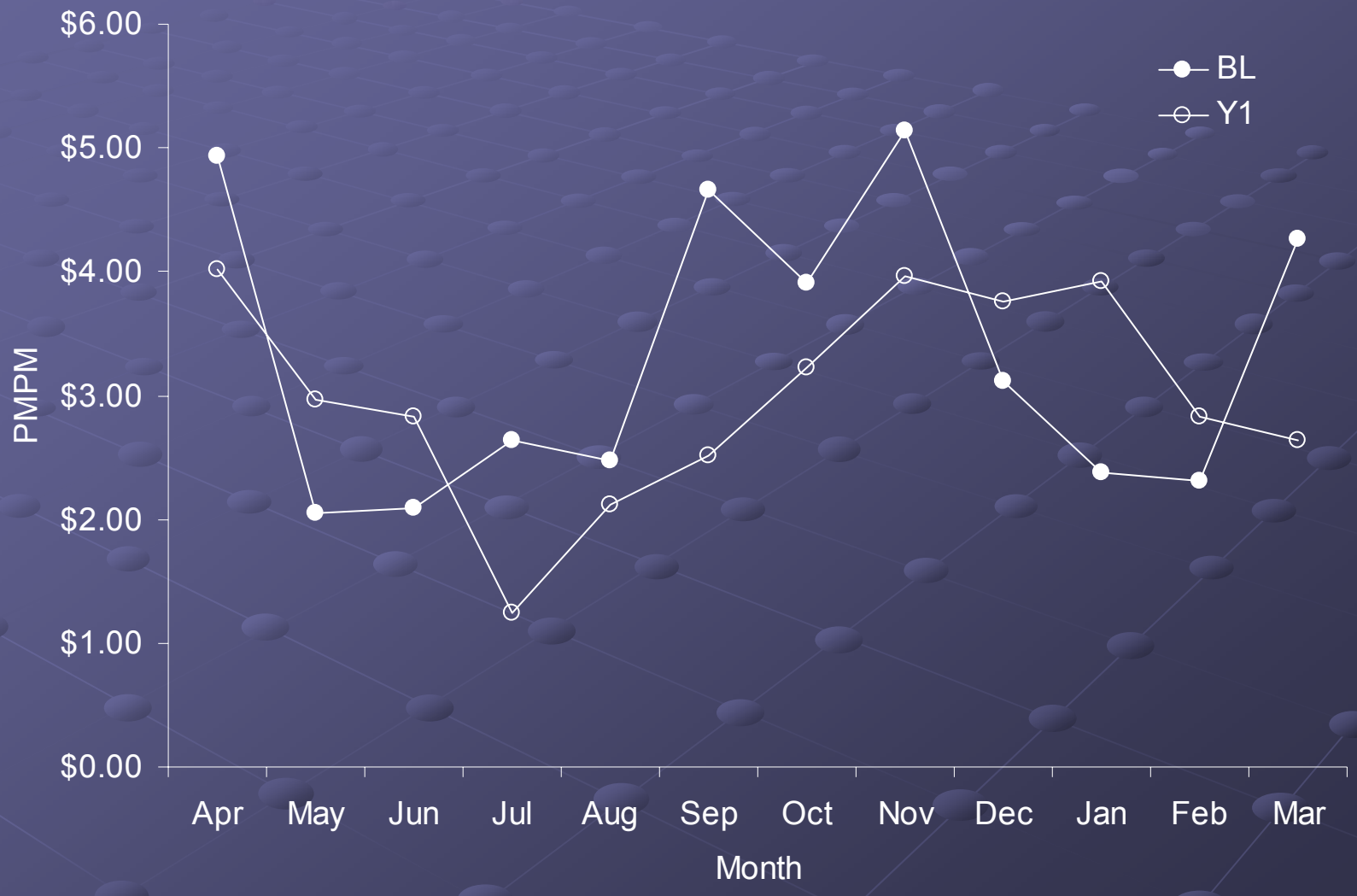
Example 3 – Year-Over-Year



Example 4 – Matched Pairs



Example 5 – Year-Over-Year



Summary (1)

- Measurement at the population does not eliminate (or account for) RTM
- Identification based on claims may likely overestimate the baseline costs due to regression to the mean
- RTM will likely explain some reduction in costs

Summary (2)

- Using costs as a direct outcome measure produces bias due to the impact of unit pricing
- A “trend” based on “non-chronics” may bias the results in favor of the vendor

Summary (3)

- There are several methodologies that can be readily applied to DM to evaluate outcomes, which can be found at www.lindenconsulting.org
- Ariel's rule of DM economic evaluation: use at least 2 different research-based designs and look for concordance of results.

Implications

- Purchasers will continue to question whether DM can save money as long as there are large differences in outcomes between commercial evaluations (using the "standard" approach) and more robust evaluations
- Other healthcare systems are looking to the U.S. for guidance as they ponder the introduction of DM in their own countries. These issues may be limiting

Q & A

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