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Relationship Between Hospital Report Cards & CMS Quality Measures

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Main findings

1. State-level report cards are not associated with improvements in the quality of hospital care.

   (Quality measured by CMS quality indicators.)

2. Finding #1 is not dependent on how long a state's report card has been available.

3. Most quality measures show improvement over time regardless of whether hospitals operate in a state with a report card.

Background

- Report cards are viewed as way of improving HC quality.
- Some evidence that public reporting of hospital quality improves performance more than private confidential reports (Hibbard, Stockard, & Tusler, 2005).
- Mixed evidence that state-level report cards change consumer behavior (Fung, et al, 2008).

Theory

- Report cards reveal high and low quality performers
- Potential pathways of hospital response:
  1. Selection/consumer choice
  2. Internal change
  3. Reputational

- States with report cards should see improvement in measured quality indicators over time via one or more of these pathways

Research issue/question

- Today 39 states make hospital report cards available to consumers
- Since 2004, CMS has maintained data on hospital quality indicators
- CMS indicators are publicly available via Hospital Compare
- Some states include CMS indicators as part of their hospital report cards

- QUESTION: Does the use of report cards improve CMS measures?

Methodology

- Outcome measures: CMS Quality Indicators
- Percentage of patients who get recommended care for

  Heart attack

  Congestive heart failure

  Pneumonia

- Compare hospitals in states with and without publicly available report cards

  Analysis 1: Any quality measures reported

  Analysis 2: CMS measures reported

Statistical model

$$QI_{it} = \alpha + \beta_1 RCTIME_{it} + \beta_2 YEAR_t + \varepsilon_{it}$$

QI_{it}: quality indicator for hospital i at time t

$RCTIME_{it}$: length of time the hospital's state has had a report card

$YEAR_t$: Reporting year (2004, 2005, 2006, or 2007)

Fixed effects model (control for heterogeneity among hospitals)
Weighted by #patients (for each indicator)
Standard errors adjusted for clustering w/in hospitals

Main study parameter

- For every year a report card is in place, quality measure improves by an amount β_1
- Example: If measure improves from 0.80 to 0.85, then

$$\beta_1 = 0.05$$ (i.e., 5 percentage points annually)

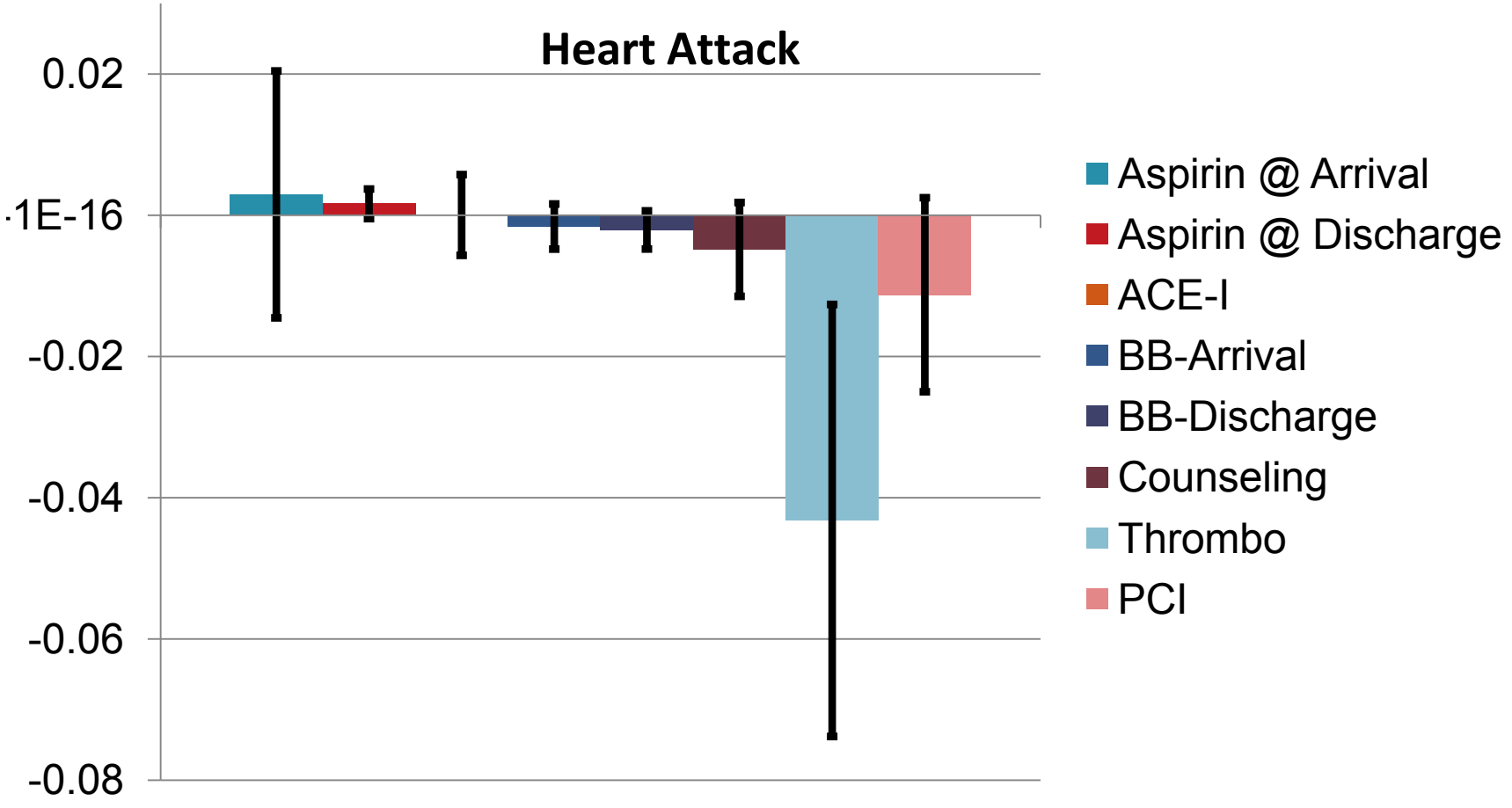
- Report β_1 for each CMS quality indicator

  Report 95% confidence intervals

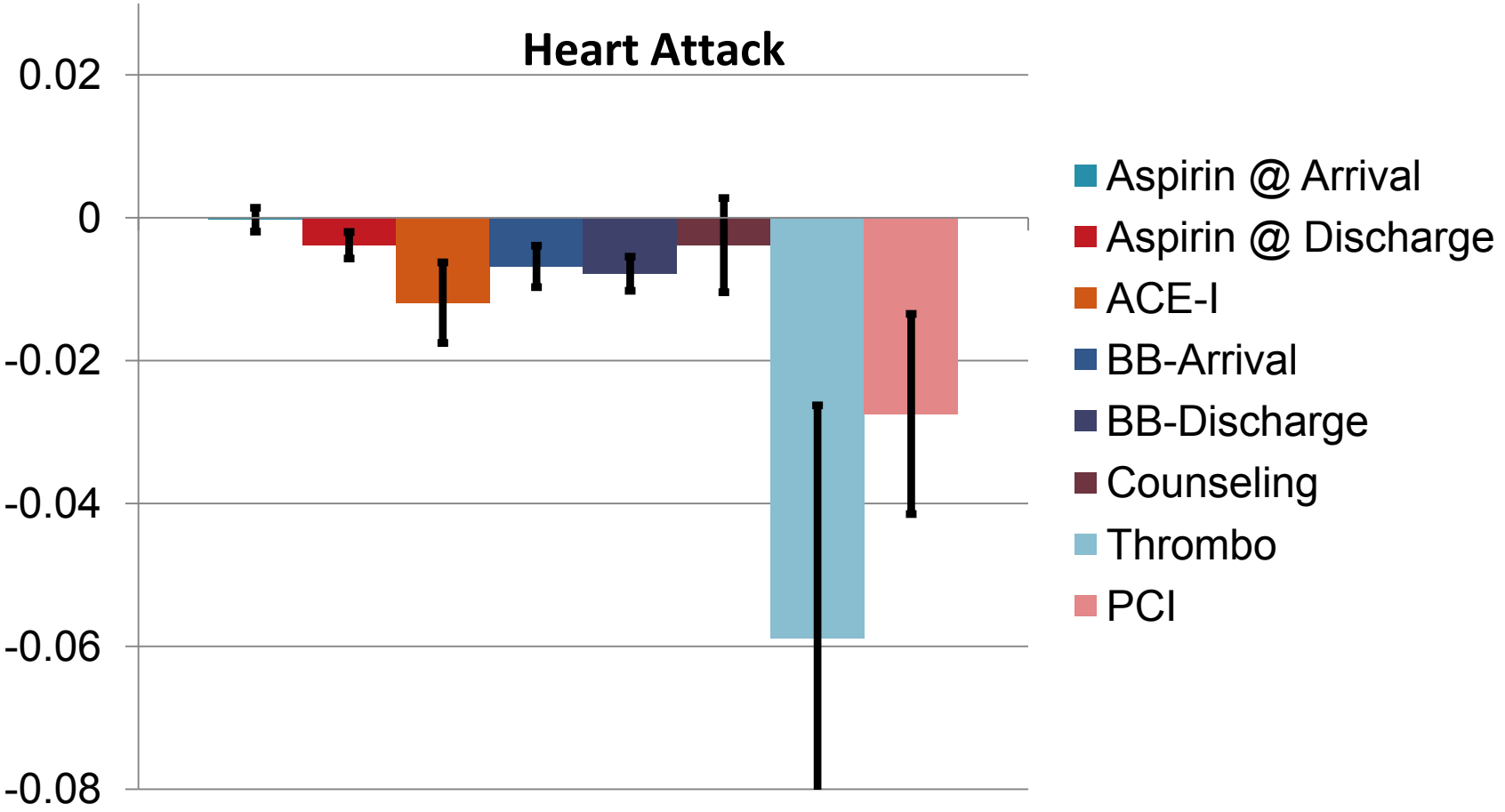
Descriptive statistics for heart attack indicators

	Mean	Standard deviation
Patients Given Aspirin at Arrival	0.82	0.30
Patients Given Aspirin at Discharge	0.79	0.31
Patients Given ACE Inhibitor or ARB for Left Ventricular Systolic Dysfunction (LVSD)	0.70	0.36
Patients Given Beta Blocker at Discharge	0.79	0.32
Patients Given Beta Blocker at Arrival	0.78	0.30
Patients Given Smoking Cessation Advice/Counseling	0.66	0.41
Patients Given Thrombolytic Medication Within 30 Minutes Of Arrival	0.34	0.40
Patients Given PCI Within 120 Minutes Of Arrival	0.43	0.40

Quality gain for each year report card is in effect (95% confidence interval in brackets) – Analysis 1



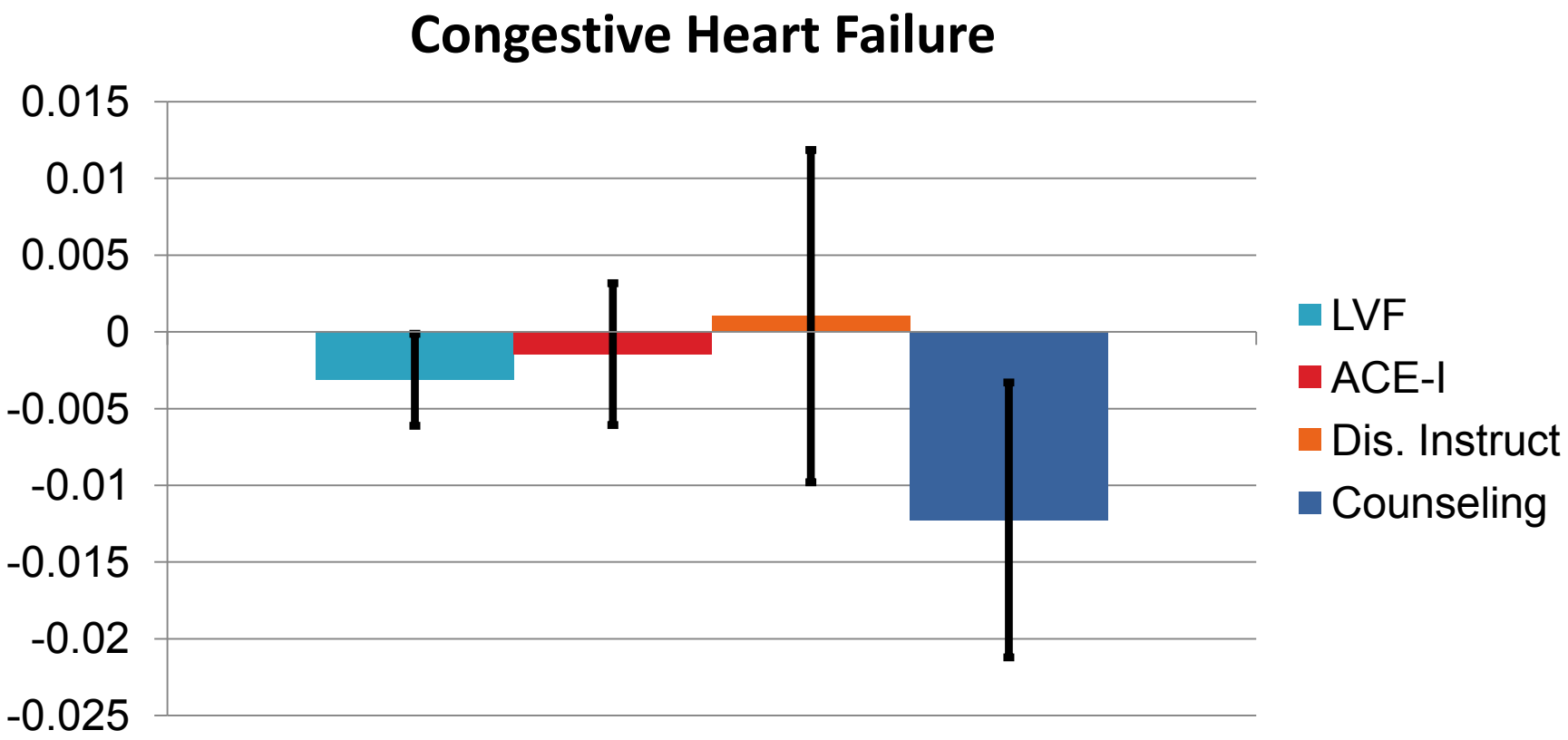
Quality gain for each year report card is in effect (95% confidence interval in brackets) – Analysis 2



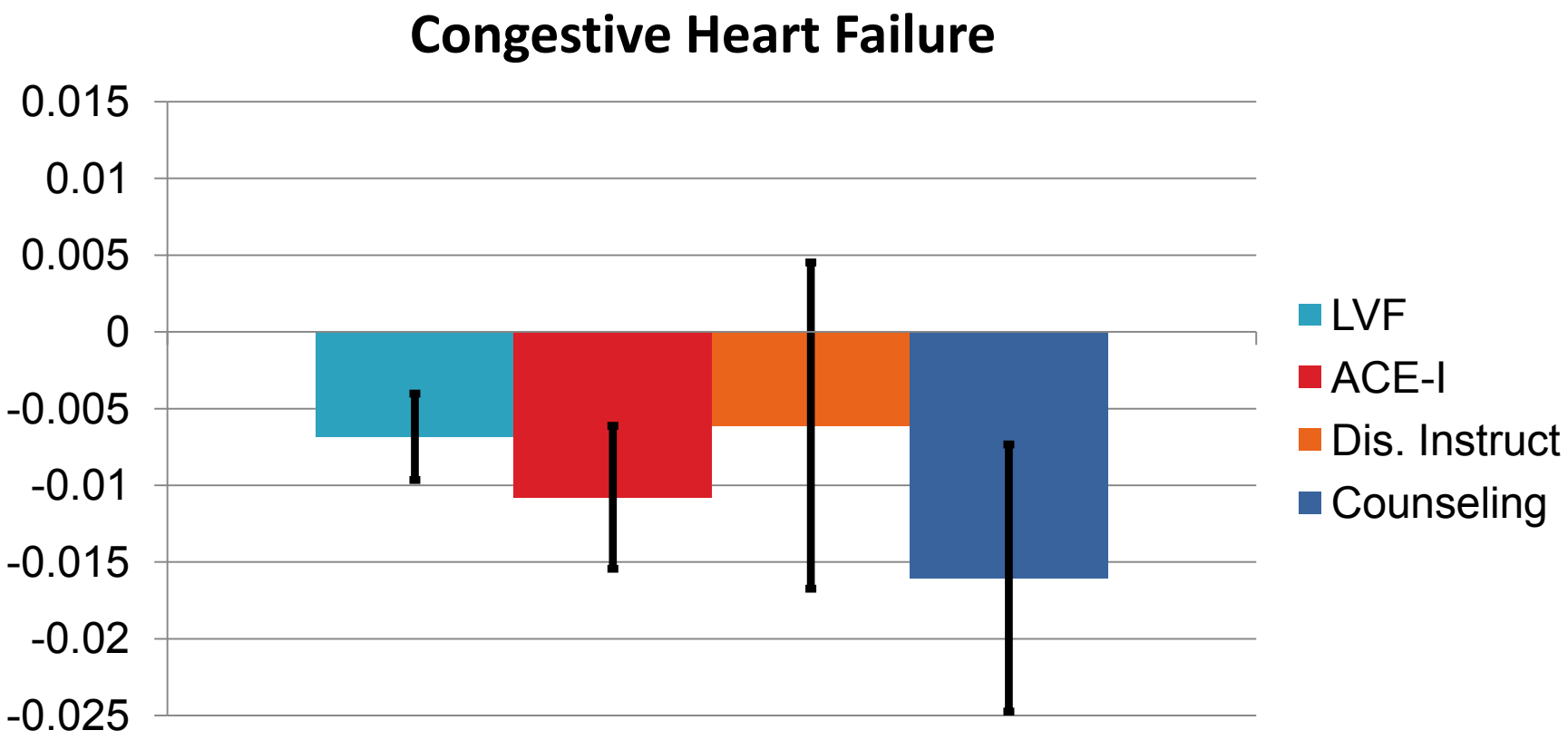
Descriptive statistics for CHF indicators

	Mean	Standard deviation
Patients Given Assessment of Left Ventricular Function (LVF)	0.80	0.25
Patients Given ACE Inhibitor or ARB for Left Ventricular Systolic Dysfunction (LVSD)	0.77	0.25
Patients Given Discharge Instructions	0.55	0.31
Patients Given Smoking Cessation Advice/Counseling	0.72	0.34

Quality gain for each year report card is in effect (95% confidence interval in brackets) – Analysis 1



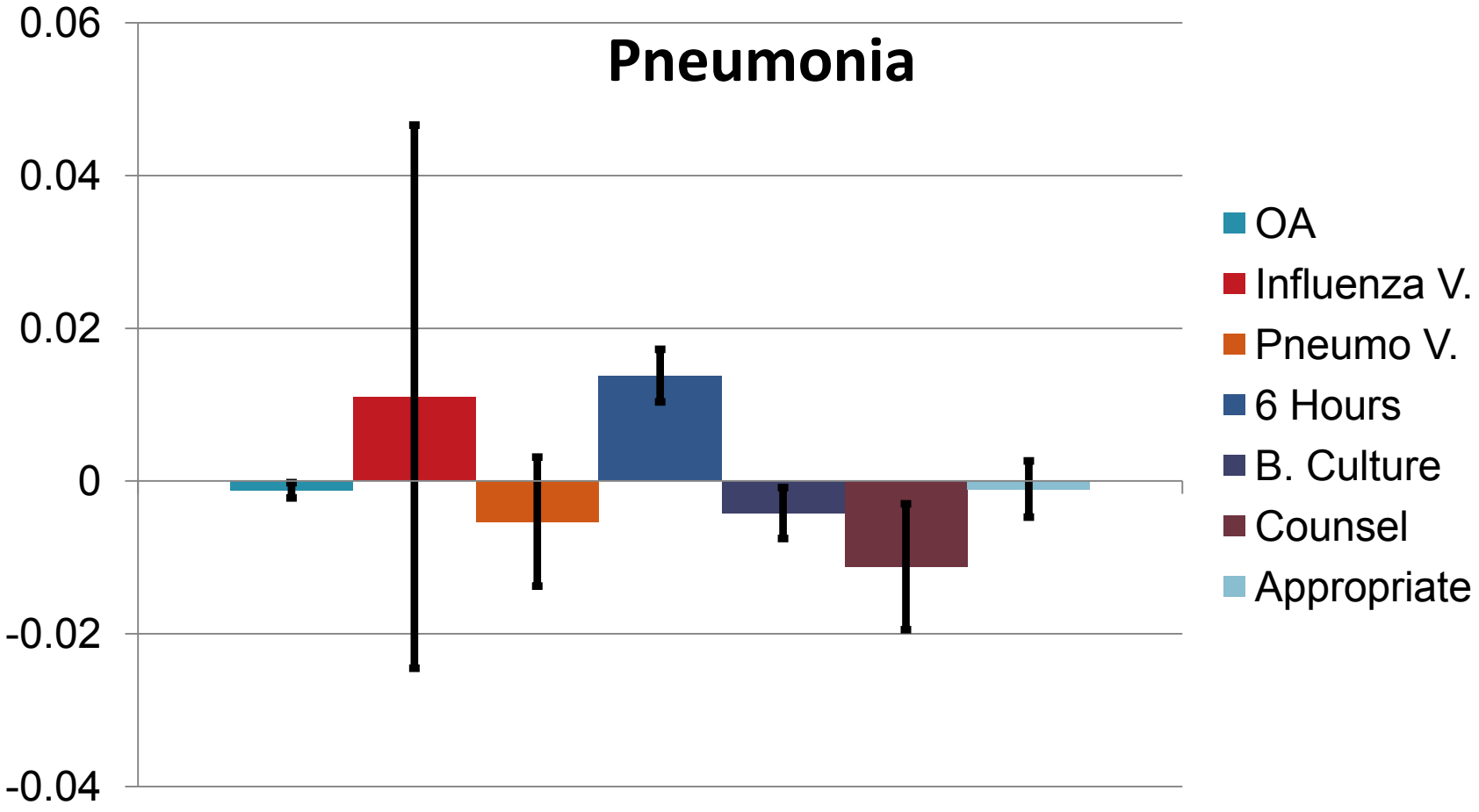
Quality gain for each year report card is in effect (95% confidence interval in brackets) – Analysis 2



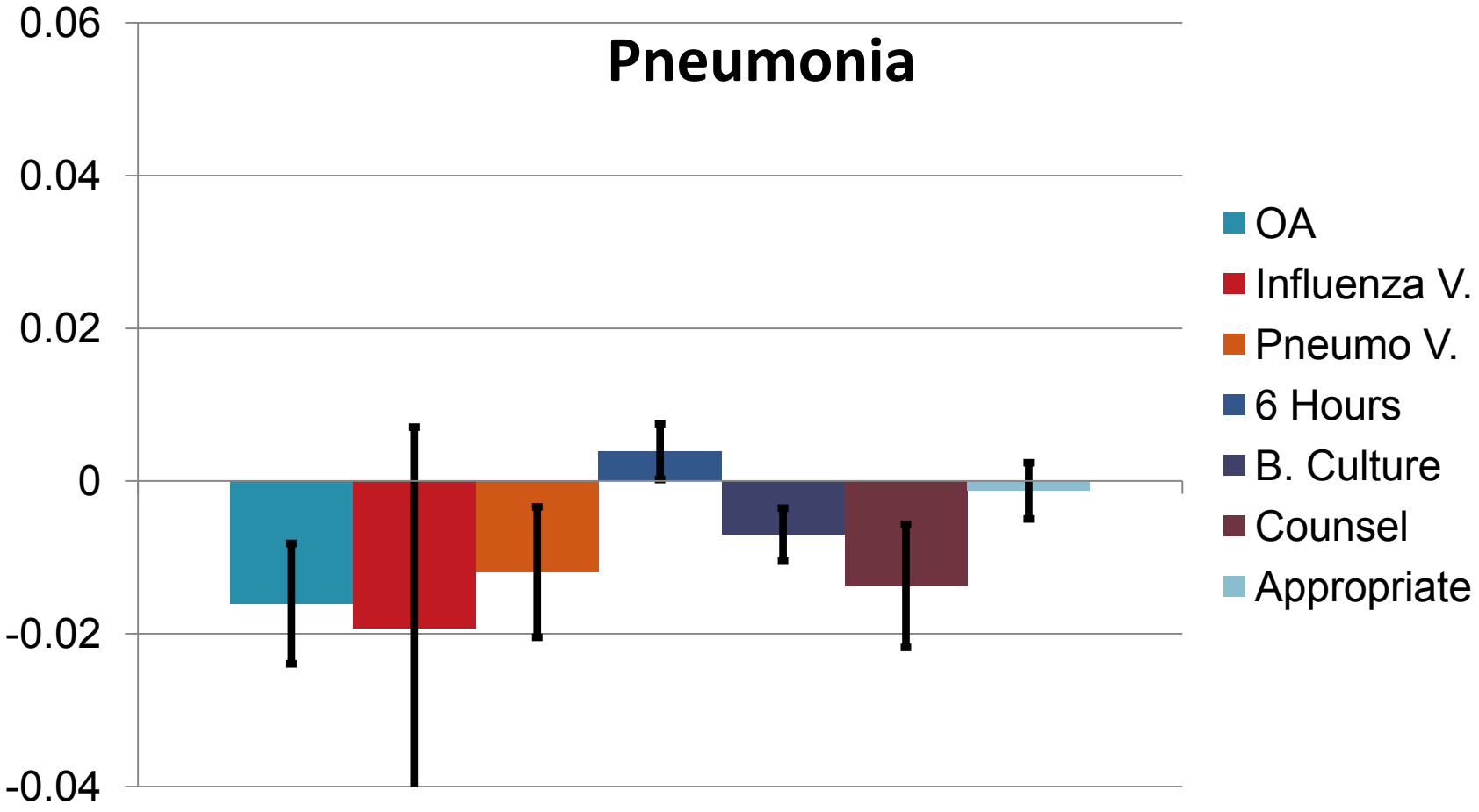
Descriptive statistics for pneumonia indicators

	Mean	Standard deviation
Patients Given Oxygenation Assessment	0.96	0.16
Pneumonia Patients Assessed and Given Influenza Vaccination (data available only for 2006)	0.67	0.30
Patients Assessed and Given Pneumococcal Vaccination	0.62	0.28
Patients Given Initial Antibiotic(s) within 4 Hours After Arrival (6 hrs for 2007)	0.79	0.19
Patients Having a Blood Culture Performed Prior to First Antibiotic Received in Hospital	0.81	0.24
Patients Given Smoking Cessation Advice/Counseling	0.71	0.32
Patients Given the Most Appropriate Initial Antibiotic(s)	0.76	0.24

Quality gain for each year report card is in effect (95% confidence interval in brackets) – Analysis 1



Quality gain for each year report card is in effect (95% confidence interval in brackets) – Analysis 2



Issues raised

1. State-level report cards may not be an effective mechanism to improve hospitals' quality of care ==> resources may be better spent elsewhere

2. Why are there negative relationships between report cards & CMS indicators?

   Appropriate quality measures

   Endogeneity

   Modeling issues