

Changes in post acute care paths following the NH PPS

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Questions I am asking

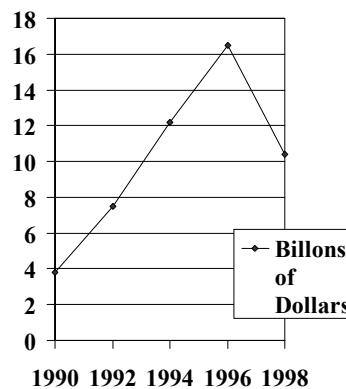
- Are these interesting issues to pursue?
- Should this be divided into two projects, a small grant submission for March and an RO1 for June or should it be a single effort?
- What do you think about the methods planned?
- Will the data sets employed give the information? Do we need Part B data?

Background

- Care of persons after acute illnesses and surgeries has become increasingly important
- Use of NHs and rehab facilities following discharge has increased dramatically
 - Outcomes more dependent on this care than in the past
- Relative rate of community discharge was 1.56 times greater in newly admitted nursing home patients receiving rehabilitation (our work)

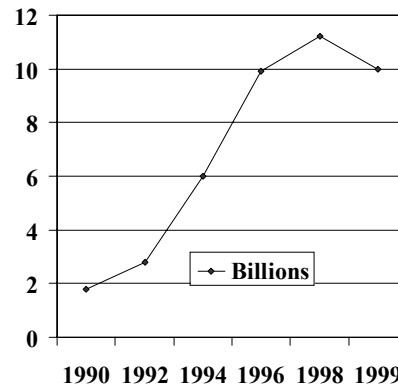
PPS changes implemented in 1998

- Decrease support for home health care
- 39% decline in the year following PPS.



PPS effects continued

- Decrease support for nursing home care
- 9.6% decline in first year of implementation



Aims

- **Aim 1:** Describe any change in outcome related to the new PPS on community discharge and survival in patients who are admitted to nursing homes
- **Aim 2:** Describe the changes in the processes of care that follow from the post acute PPS changes.
 - 1a: Does acute hospital LOS increase?
 - 1b: Does use of acute rehab increase?
 - 1c: What is the nature of the change in SNFs, HHAs

Aims

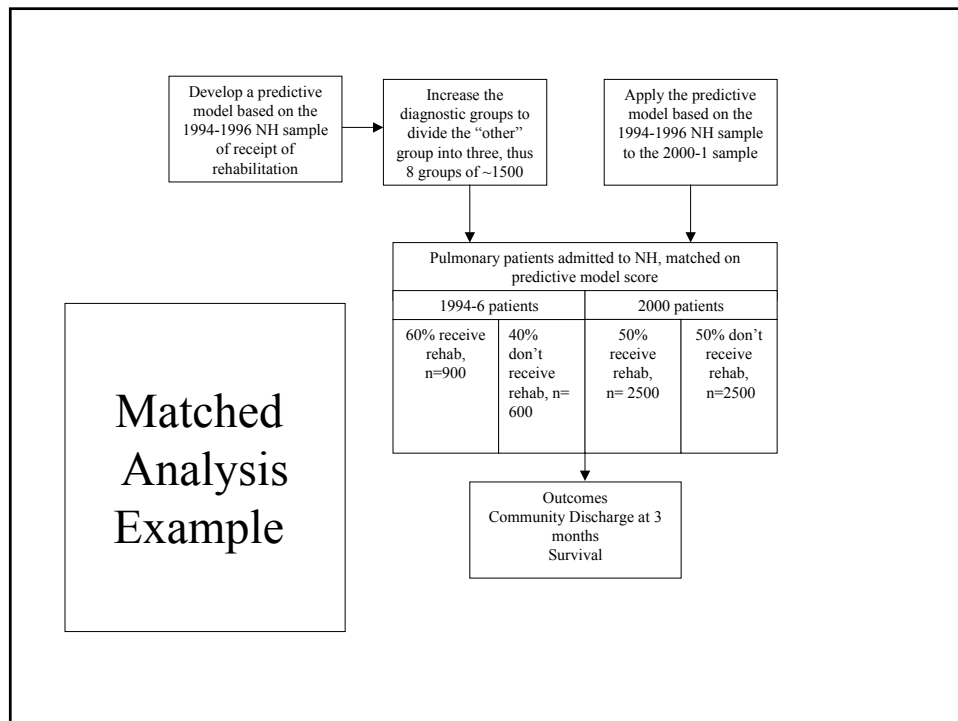
- **Aim 3:** Describe the cost changes resulting from these changes in three primary sectors: Medicare supported services, Medicaid supported services, privately funded care

Pilot data needed

- NEO Medpar files
 - examine major diseases causing Medicare supported skilled nursing care in the past
 - rehospitalization rates from NHs
 - Costs for NH care
- Ohio Medicaid files
 - examine acute hospital major diseases driving NH care not supported by Medicare
 - Medicaid costs

Methods for first aim

- Apply propensity methodology to NH patients in 1994-6 to patients admitted in 2000
- Examine community discharge outcomes and survival in the two eras
 - matched analysis for community discharge
 - multivariable analysis for survival



2X2 table of community discharge outcome

	1994-6	2000
Discharged to community by 3 months	$900 * (0.35) + 600 * (0.20) = 435$	$2500 * (0.35) + 2500 * (0.20) = 1375$
Not discharged to community by 3 months	1065	3625
	1500	5000
OR= 1.08 (95% CI 0.95, 1.23)		

Is there another approach to this way of matching?

- Would any better information likely come from approaching this on a quintile basis?
 - The changes may be in the tails of the predictive model's distribution
 - Should I just focus on the global result with its much larger n?

Multivariable Modeling

Discharge to Community=

$$\mathbf{B}_1 \text{ (year of admission)} + \mathbf{B}_2 \text{ (rehab)} + \mathbf{B}_3 \text{ (rehab*year of admission)} + \mathbf{B}_4 \text{ (predictive score)} + \mathbf{B}_{(5-j)} \text{ (severity covariates)}$$

Survival =

$$\mathbf{B}_1 \text{ (year of admission)} + \mathbf{B}_2 \text{ (rehab)} + \mathbf{B}_3 \text{ (rehab*year of admission)} + \mathbf{B}_4 \text{ (predictive score)} + \mathbf{B}_{(5-j)} \text{ (severity covariates)}$$

Dose response effect

Discharge to Community=

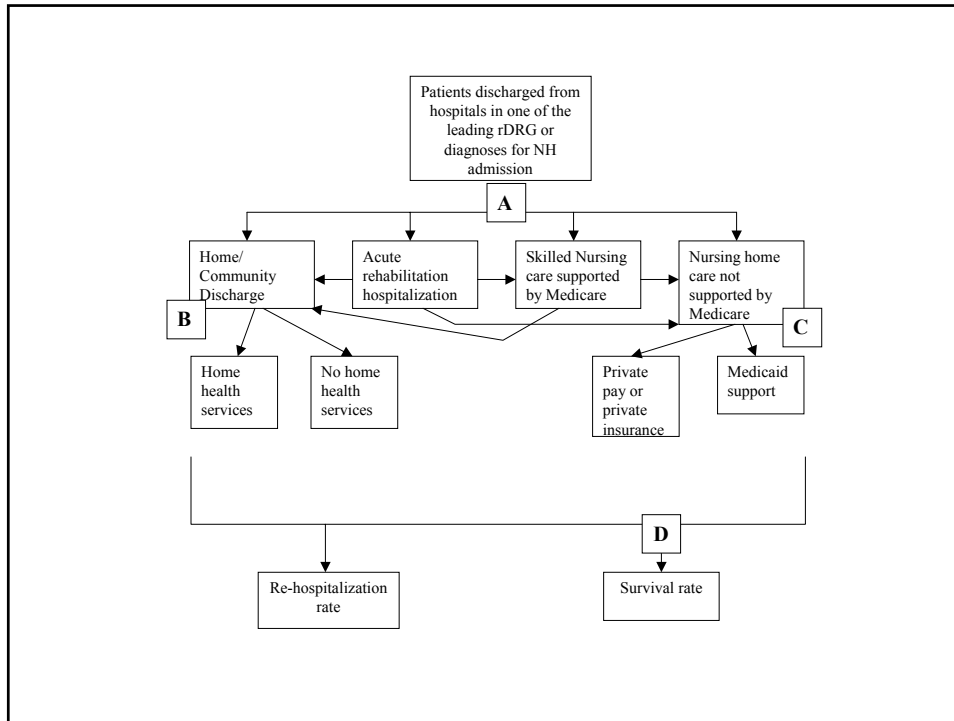
$$\mathbf{B}_1 \text{ (year of admission)} + \mathbf{B}_2 \text{ (rehab hours per week)} + \mathbf{B}_3 \text{ (rehab hours per week*year of admission)} + \mathbf{B}_4 \text{ (predictive score)} + \mathbf{B}_{(5-j)} \text{ (severity covariates)}$$

Methods for Aims 2 and 3

- Choose 5 groups of acute hospital patients who frequently use NHs
 - stroke
 - hip fracture
 - Cardiovascular rDRG minus stroke
 - other orthopedic care
 - chronic pulmonary disease

Methods continued

- Develop analytic data file of all medical services supported by Medicare or Medicaid following sentinel admission with one of the five diagnostic groups for one year post initial admission
- Provider descriptions taken from AHA and SNF files
 - do we need to get Part B data?



Main Study Variables of Process

Acute hospital LOS

- (A) Distribution of patients to post hospital sites
- (B) Community discharge rates after 3 months, one year
- (C) Long term nursing home residence
- (D) Survival

Main Cost Variables

- Overall costs of care
 - savings??
- Distribution of costs
 - have costs been shifted to private and Medicaid
- Survival change per dollar saved
- Additional long term care time per dollar saved