



Impact of the Oregon Medicaid Demonstration on Preventable Hospitalization Rates

Somnath Saha, MD, MPH

Ady Oster, MD

Andrew B. Bindman, MD

Data and technical support from the
Oregon Office for Health Policy and Research

Funding from the Medical Research Foundation of Oregon

Background

- Preventable (avoidable) hospitalization (PH)
 - Hospitalization for “ambulatory-care-sensitive” (ACS) conditions
 - Acute conditions for which early and appropriate ambulatory care prevents progression (e.g., cellulitis)
 - Chronic conditions for which regular and appropriate ambulatory care prevents exacerbation (e.g., asthma)
- PH rates hypothesized to be an indicator of ambulatory (primary) care access and quality

Background

- Rates of preventable hospitalization vary among populations with different levels of access to 1^o care
 - Uninsured vs. insured
 - Poor vs. non-poor
 - Blacks vs. whites
 - Low vs. high self-rated access to care
- PH rates validated as index of population-level access to care

Background

- In 1994, Oregon expanded Medicaid eligibility to all persons under 100% FPL
 - Increased state funding
 - Capitated managed care
 - Prioritized list of services (explicit rationing)
- Increased access by most measures
 - Provided coverage to 130,000 previously uninsured persons
 - Reduced state uninsured rate from 18% to 11%
 - Provided access to over 90% of physicians in Oregon
 - Reduced ED visits and uncompensated care statewide
- Did the OHP Medicaid Demonstration reduce PH rates?

Hypotheses

PH rates within the Medicaid+uninsured population decreased after the Medicaid expansion

AND

This decrease in PH rates was greater than any concurrent decrease in PH rates for Oregonians with private and public insurance other than Medicaid (non-Medicaid insured)

Methods

- Calculated annual PH rates from 1990-2000
 - Medicaid+uninsured
 - Pooled because we were unable to isolate directly affected cohort of newly insured persons
 - Non-Medicaid insured
 - Rates standardized by age and sex (direct method)
- Hypothesis testing:
 - Compared PH rates before and after 1994 (1990-93 vs. 1995-2000) within Medicaid+uninsured group
 - Compared temporal change in PH rates for Medicaid+uninsured group vs. non-Medicaid insured (“control”) group

Methods

$$\text{PH rate} = \frac{\text{\# of preventable hospitalizations}}{\text{population count}}$$

- Numerator:
 - Source: Oregon state hospital discharge database
 - Conditions: asthma, COPD, CHF, diabetes, hypertension, cellulitis, gangrene
 - Excluded: <18 or \geq 65, non-Oregon resident, transfers, federal hospital, Medicare listed as payor
- Denominator
 - Medicaid beneficiaries: from Medicaid eligibility files
 - Uninsured: from Oregon Population Survey (odd years interpolated)
 - Non-Medicaid insured: (total OR pop'n – uninsured – Medicaid)
 - Included adults 18-64

Methods

- Calculated hospitalization rates for “marker” conditions
 - Appendicitis, GI obstruction, subarachnoid hemorrhage
 - Hospitalization rates assumed to be stable over time and across populations
 - To account for potential errors from inaccurate population counts or coding changes

- Multivariate model

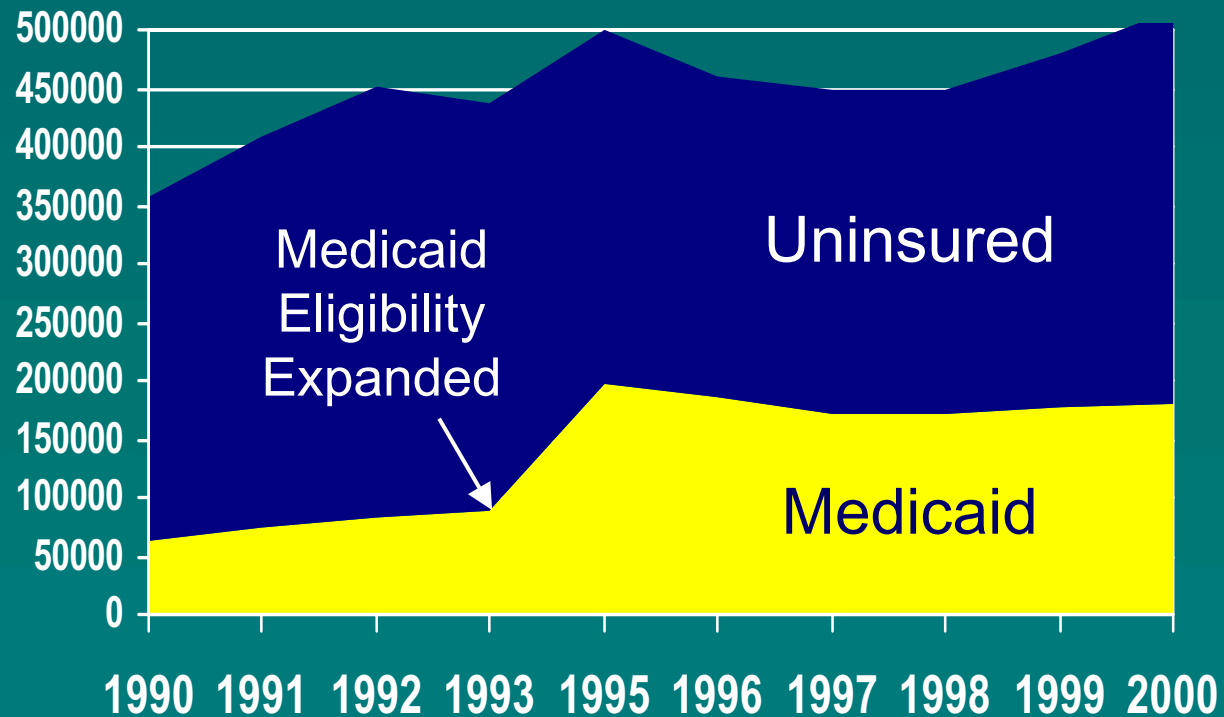
$$\text{Logit (PH rate)} = \beta_0 + \beta_1 \text{age} + \beta_2 \text{sex} + \beta_3 \text{marker} + \beta_4 \text{time} + \beta_5 \text{payor} + \beta_6 \text{time payor}$$

β_4 : change in PH rates over time

β_6 : change in PH rates relative to non-Medicaid insured population

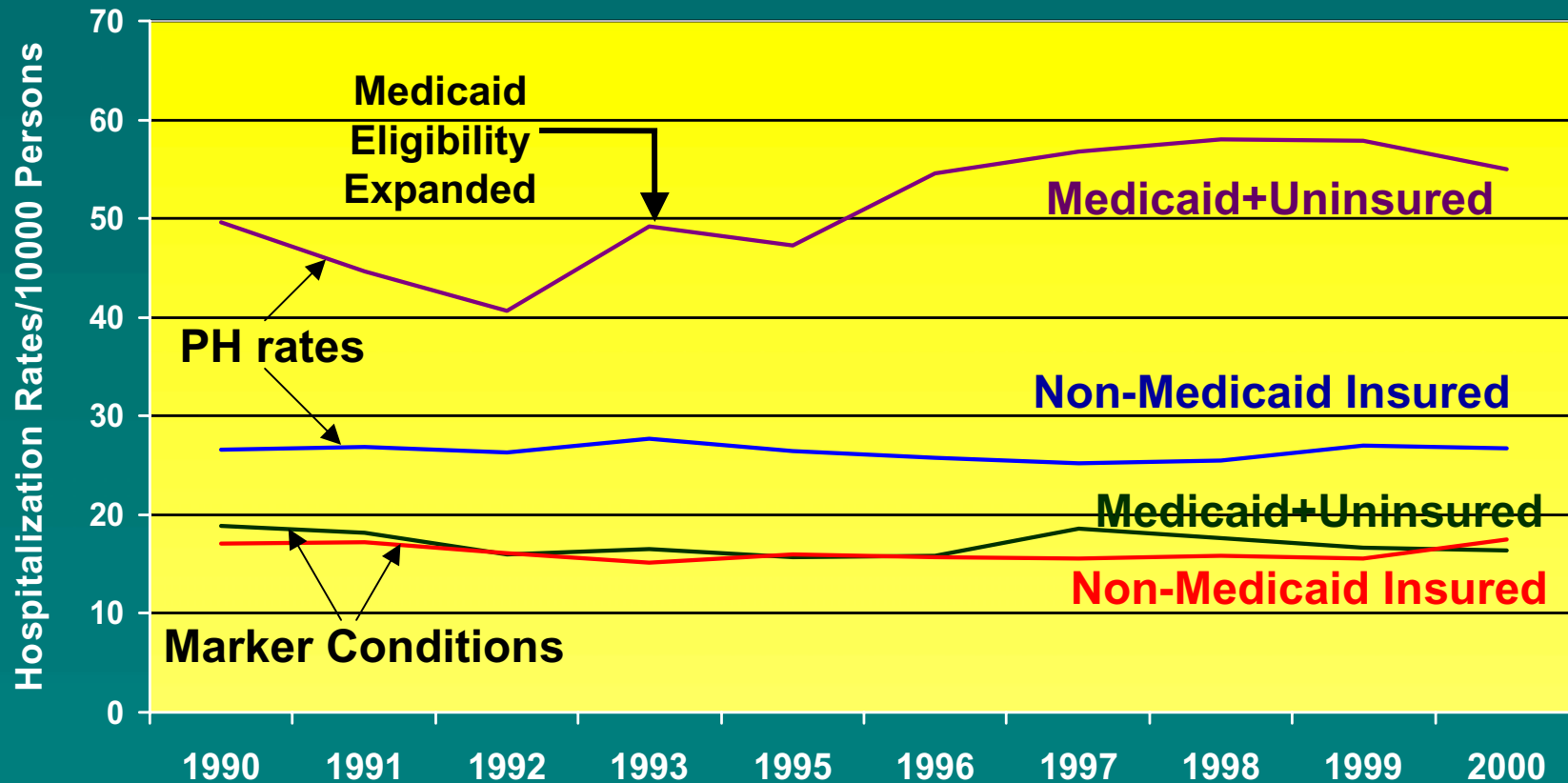
Results

- With eligibility expansion number of Medicaid beneficiaries aged 18-64 doubled



Results

- PH rates for Medicaid+uninsured group *increased* after Medicaid expansion
 - Rates for non-Medicaid insured were relatively stable



Results

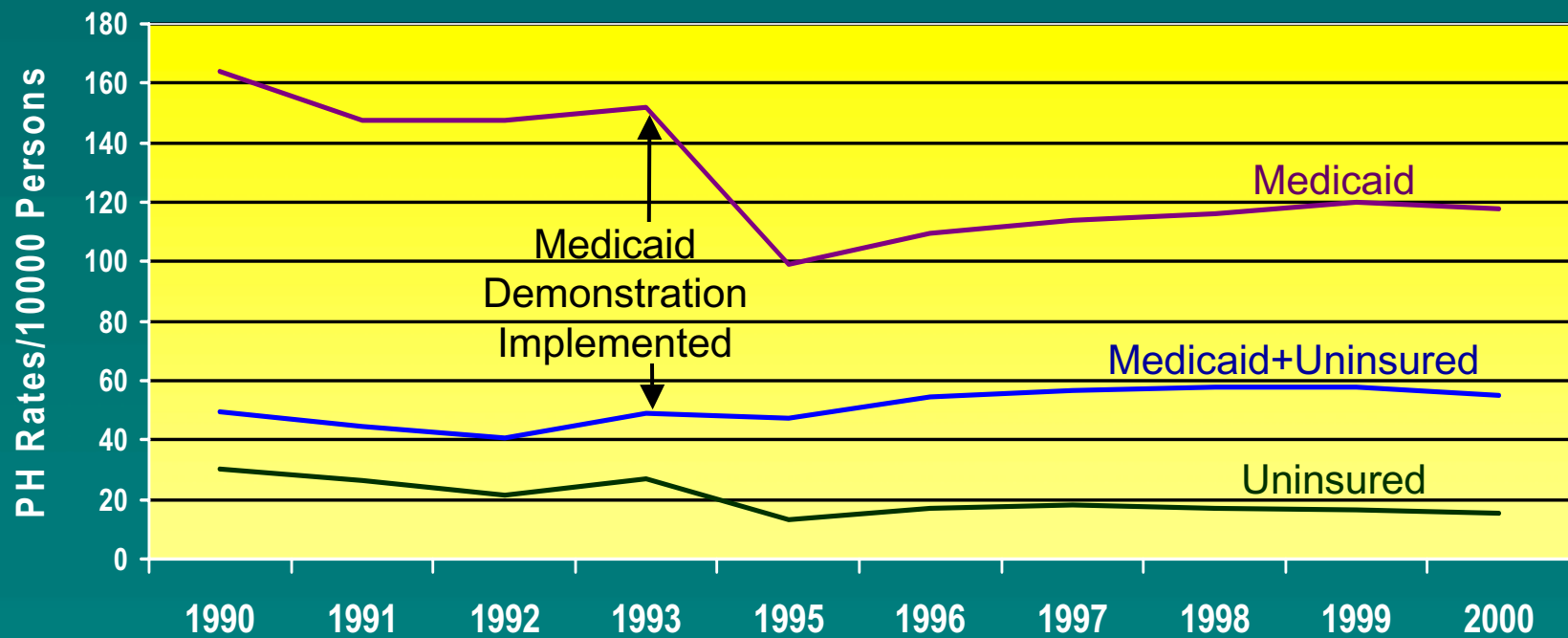
PH Rates Before and After Medicaid Expansion

	Standardized PH Rate per 10,000		Post- vs. Pre-1994 (odds ratios)		Time x Payor Comparison
	1990-93	1995-2000	Unadjusted	Adjusted* (95% CI)	Adjusted*
Medicaid+ Uninsured	46.05	54.88	1.19	1.18 (1.14-1.21)	p < .001
Non-Medicaid Insured	26.86	26.11	0.97	1.01 (.99-.1.03)	

* Adjusted for age, sex, and hospitalization rates for marker conditions

Results

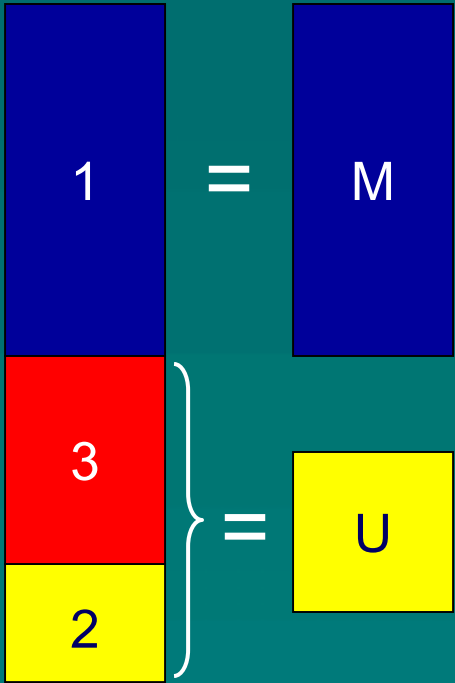
- PH rates declined for Medicaid and uninsured groups individually, but increased for combined Medicaid+uninsured group



Summary

- PH rates were lower among Medicaid beneficiaries after 1994 as compared with before 1994
- PH rates were lower among uninsured after 1994 as compared with before 1994
- PH rates were *higher* for Medicaid + uninsured after 1994 as compared with before 1994
- Ecological study – can only speculate as to how to explain this “paradoxical” finding

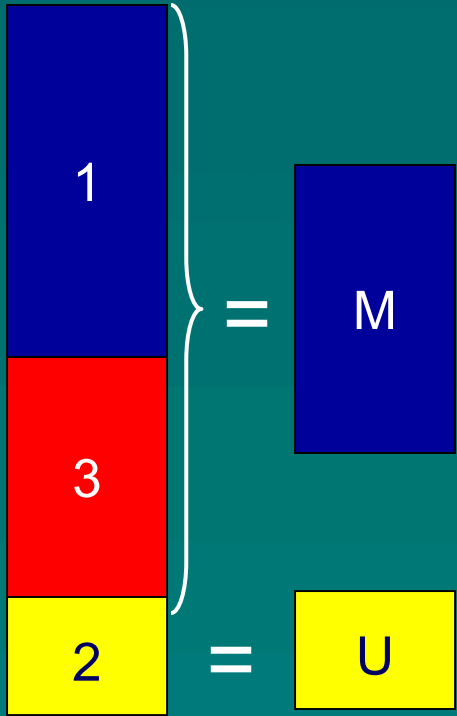
Explanation 1: Simplistic



Pre-1994

<u>Group</u>	<u>Pre-1994</u>	<u>Post-1994</u>
1	Medicaid	Medicaid
2	Uninsured	Uninsured
3	Uninsured	Medicaid

M = Medicaid
U = Uninsured



Post-1994

Explanation 1: Simplistic

- Potential reasons for increase in PH rates among newly insured
 - Access to 1^o care may have facilitated access to hospitals
 - Insurance coverage may have diminished disincentives for patients to seek care and for providers to admit to hospital (“pent-up demand”)
 - Churning between uninsured and Medicaid pools
 - Medicaid eligible persons disenrolled when well, re-enrolled when ill, potentially during a hospitalization

But...

- New eligibles entering Medicaid program in 1994 were generally *less healthy* than categorical eligibles
- Hypothesis that PH rates in Medicaid group declined due to a bolus of healthy new eligibles does not have face validity

Explanation 2: Complex

- Why did PH rates in Medicaid group decline?
 - Improved access to primary care within Medicaid program, for both categorical Medicaid beneficiaries and new eligibles
- Why did PH rates in the uninsured group decline?
 - Exodus of 100,000 persons under 100% FPL, who were relatively less healthy than those who remained uninsured

Explanation 2: Complex

- Why did PH rates in Medicaid + uninsured group increase?
 - Undercounting of uninsured persons in PH rate denominator
 - Lot of churning between uninsured and commercially insured in 2nd half of 1990s
 - People obtained insurance due to healthy economy but were not able to keep insurance
 - Churners may have been counted in OPS cross-section as being insured but hospitalized after losing insurance
 - Other uninsured may also not have been counted in OPS (migrant workers, people moving to Oregon)
 - Undercounting of uninsured in OPS in 2nd half of 1990s would artificially inflate PH rates in uninsured group