

Katherine Baicker, Sarah Taubman, Heidi Allen, Mira Bernstein, Jonathan Gruber, Joseph P. Newhouse, Eric Schneider, Bill Wright, Alan Zaslavsky, Amy Finkelstein, and the Oregon Health Study Group, "The Oregon Experiment – Effects of Medicaid on Clinical Outcomes", New England Journal of Medicine, 2013 May; 368(18): 1713-1722.

Article analysis:
*The Oregon Experiment —
Effects of Medicaid on Clinical
Outcomes*

Yanxi Zeng

Content

Background

Introduction

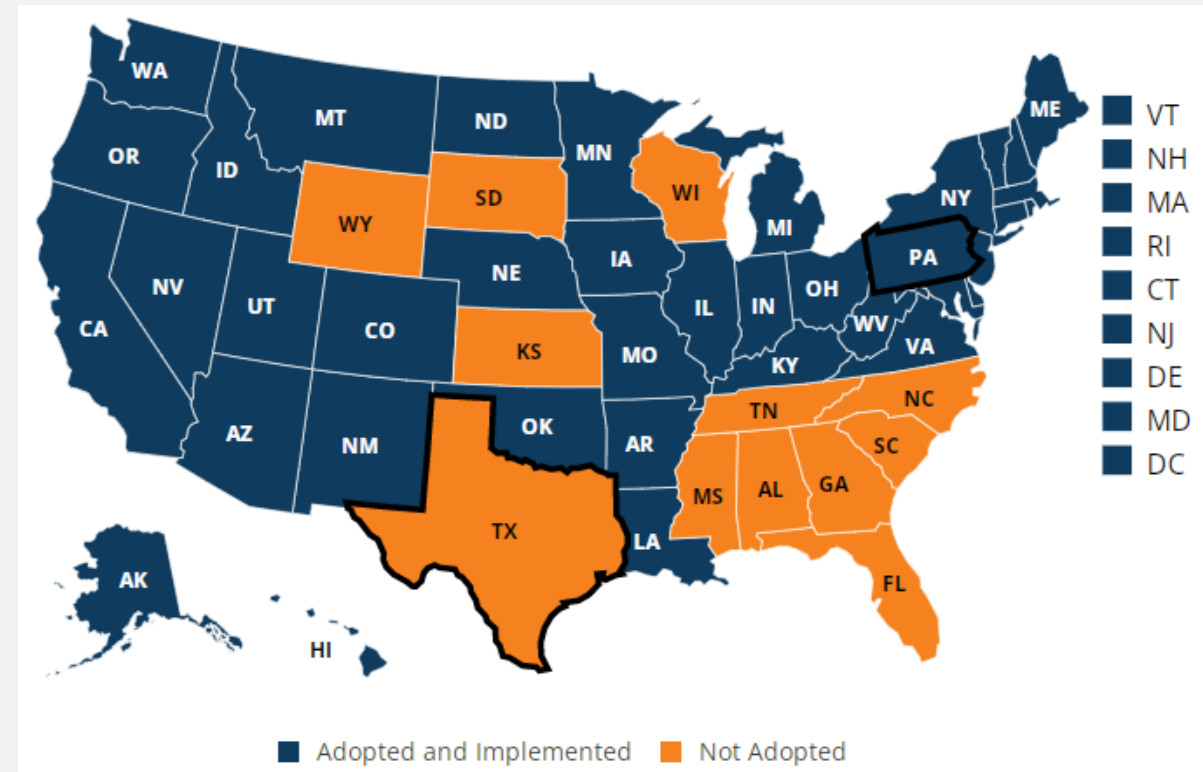
Results

Discussion and Possible Policy Lessons

Background

Medicaid

- A public health insurance program for the low-income individuals in the U.S.A.
- ✓ Federal program run by the states
- ✓ Some flexibility in setting eligibility criteria
e.g. FPL (federal poverty level)
- Medicaid expansion ¹



(Source: Kaiser Family Foundation)

Debates

- Debates about the impact of expanding public health insurance
 - ✓ Especially after the 'Obama Care' (2010), which aims to expand Medicaid
- There was little scientific evidence from the actual effect of expanding Medicaid

The Washington Post

**How the Medicaid expansion
could actually save states money**

**Why Medicaid is a
Humanitarian Catastrophe**

THE WALL STREET JOURNAL.

OPINION

Medicaid Is Worse Than No Coverage at All

New research shows that patients on this government plan fare poorly. So why does the president want to shove one in four Americans into it?

By SCOTT GOTTLIEB

Introduction

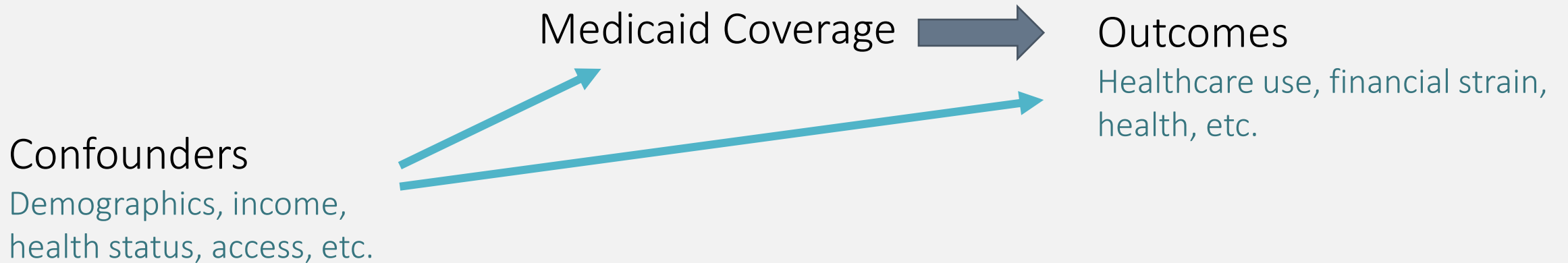
The experiment

The Oregon Medicaid expansion program

- Covers those financially but not categorically eligible for Medicaid
low-income (below 100% FPL), uninsured, able-bodied adults
- ✓ Opened waitlist in 2008: ~90,000
- ✓ Lottery: randomly selected ~30,000 names from the waitlist
- ✓ Successfully enrolled in Medicaid: ~10,000

*Note: - Only lottery winners won the opportunity to apply for Medicaid
- Successfully enrolled only if applied and met the eligibility requirements

The experiment



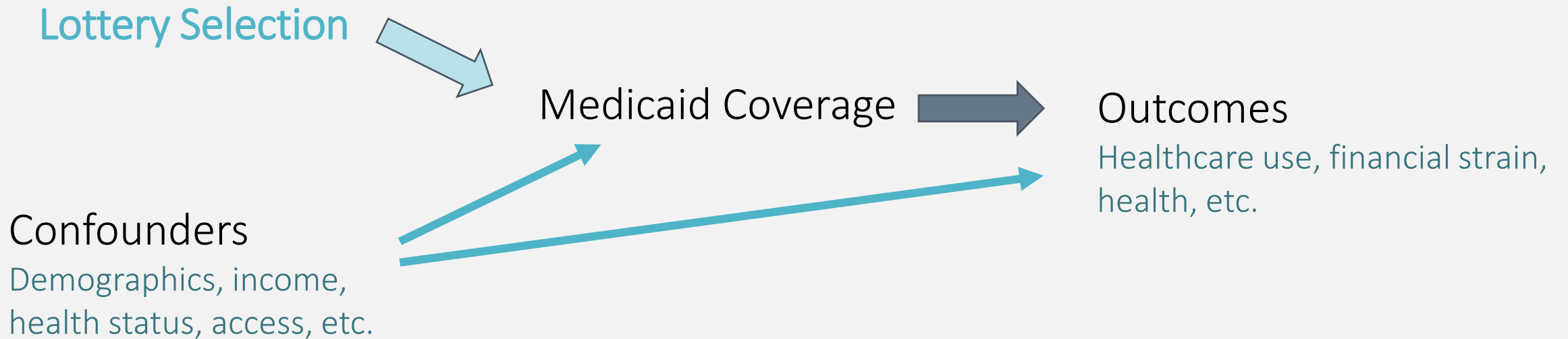
When exploring the effect of Medicaid coverage on outcomes:

Confounders exist

→ Multicollinearity

→ Endogeneity

The experiment



Using lottery selection as an instrument variable, which ensures:

- Lottery selection and Medicaid coverage have a strong correlation
- Lottery selection and outcomes have no direct relationship

Lottery selection → Medicaid coverage → Outcomes

The experiment

Take advantages from lottery selection...

Randomized Controlled Trial

Research design

Using the lottery as a randomized control trial, to evaluate the effects of Medicaid coverage on health care use, health, financial strains and some other outcomes after approximately 2 years.

- ✓ The treatment group (lottery winner): able to apply to Medicaid
- ✓ The control group: unable to apply to Medicaid; remain uninsured

The only expected difference between the control and treatment groups in such a randomized controlled trial (RCT) is the outcome variable being studied.

The experiment

Take advantages from lottery selection...

Randomized Controlled Trial

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Intent-to-treat (ITT) approach

Comparison is based on selection, not insured vs. uninsured



The only expected difference between the control and treatment groups in such a randomized controlled trial (RCT) is the outcome variable being studied.

Data

In-person data collection

- Questionnaire and health examinations including
 - ✓ survey questions
 - ✓ Anthropometric and blood pressure measurement
 - ✓ dried blood spot collection
 - ✓ catalog of all medications
- Field between September 2009 and December 2010
 - ✓ Average response ~25 months after lottery began
- Limited to Portland, Oregon, metropolitan areas
- 20,745-person sample: 10,405 lottery winners, 10,340 control group

Sample characteristics

Ages: range 19 to 64; average age is 41

Gender: Nearly 56% women

Race: 82% white; 4% black; 12% Hispanic

- No significant differences between lottery winners and control groups

Results

Results

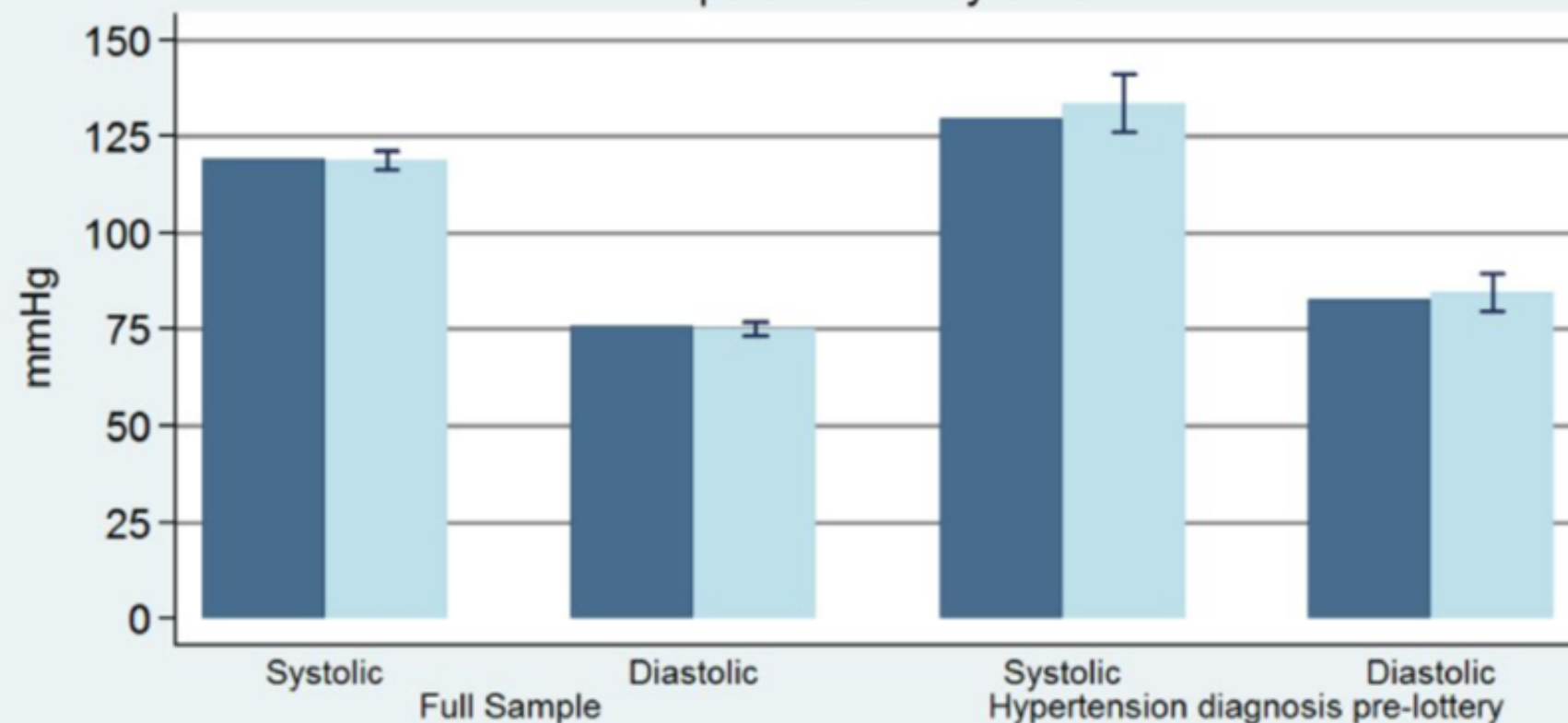
Clinical Measures and Health Outcomes

Health-related Quality of Life and Happiness

Financial Hardship

Health Care Use

Blood Pressure Inperson Survey Data



Blood Pressure

Control Mean
 Control Mean plus Medicaid Effect
 CI for Medicaid Effect

| Variable | Mean Value in Control Group | Change with Medicaid Coverage (95% CI) [†] | P Value |
|---------------------------|-----------------------------|---|---------|
| Blood pressure | | | |
| Systolic (mm Hg) | 119.3±16.9 | -0.52 (-2.97 to 1.93) | 0.68 |
| Diastolic (mm Hg) | 76.0±12.1 | -0.81 (-2.65 to 1.04) | 0.39 |
| Elevated (%) [‡] | 16.3 | -1.33 (-7.16 to 4.49) | 0.65 |

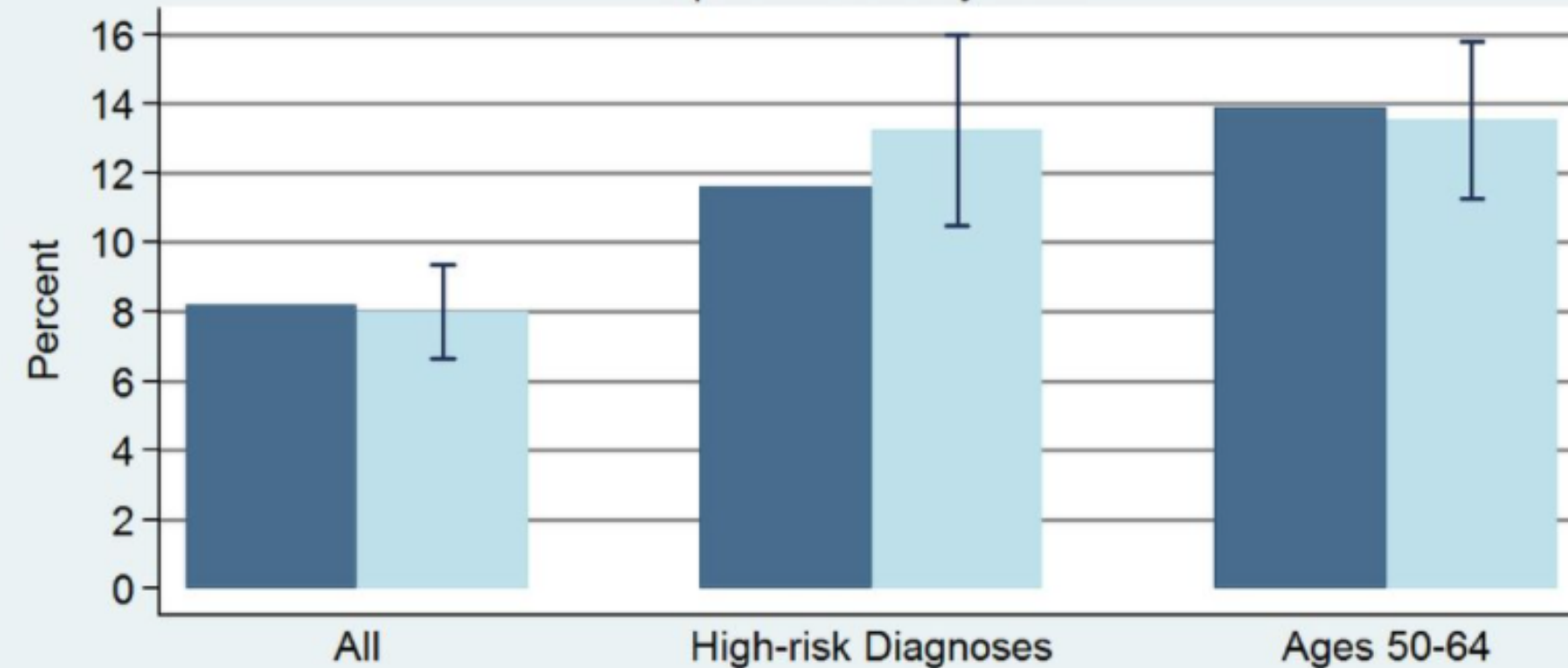
Clinical Measures and Health Outcomes

Blood pressure

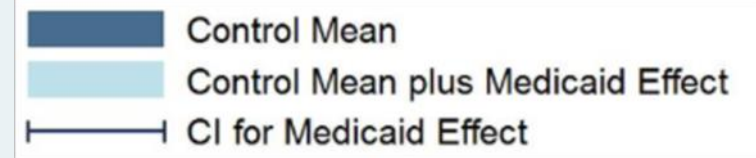
No significant effects on diagnosis or medication

Framingham Risk Scores

Inperson Survey Data



Predicted risk of a cardiovascular event within 10 years (measured by Framingham risk scores)



| Variable | Mean Value in Control Group | Change with Medicaid Coverage (95% CI) [†] | P Value |
|---|-----------------------------|---|---------|
| Framingham risk score (%) ^{§§} | | | |
| Overall | 8.2±7.5 | -0.21 (-1.56 to 1.15) | 0.76 |
| High-risk diagnosis | 11.6±8.3 | 1.63 (-1.11 to 4.37) | 0.24 |
| Age of 50–64 yr | 13.9±8.2 | -0.37 (-2.64 to 1.90) | 0.75 |

Clinical Measures and Health Outcomes

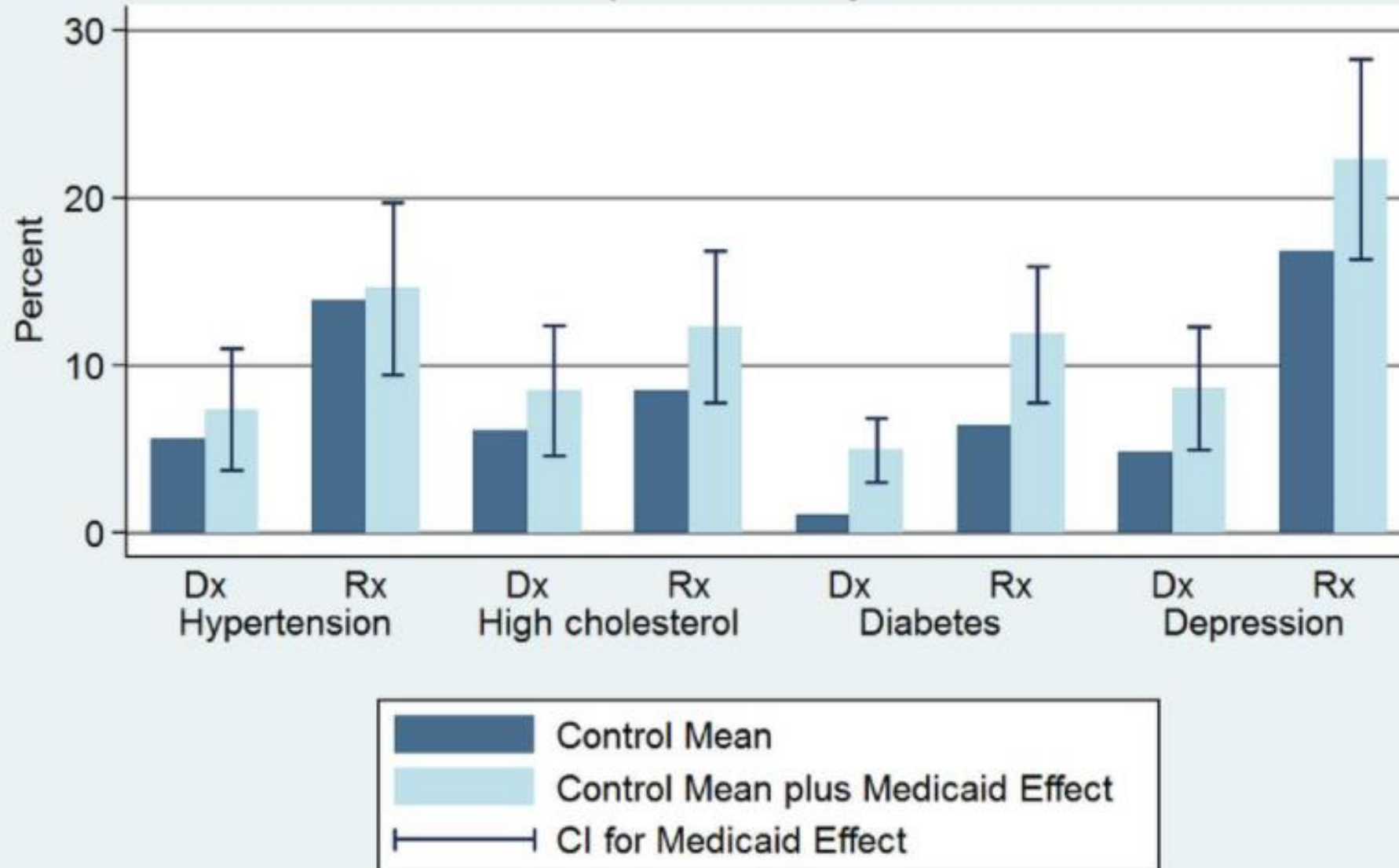
Blood pressure

No significant effects on diagnosis after the lottery or medication

Predicted risk of a cardiovascular event within 10 years

No significant change

Post-lottery Diagnosis (Dx) and Current Medication (Rx) Inperson Survey Data



Hypertension
High cholesterol
Diabetes
Depression

| Variable | Mean Value in Control Group | Change with Medicaid Coverage (95% CI) [†] | P Value |
|---|-----------------------------|---|---------|
| Hypertension | | | |
| Diagnosis after lottery (%) ^{§¶} | 5.6 | 1.76 (−1.89 to 5.40) | 0.34 |
| Current use of medication for hypertension (%) [§] | 13.9 | 0.66 (−4.48 to 5.80) | 0.80 |
| Cholesterol** | | | |
| Total level (mg/dl) | 204.1±34.0 | 2.20 (−3.44 to 7.84) | 0.45 |
| High total level (%) | 14.1 | −2.43 (−7.75 to 2.89) | 0.37 |
| HDL level (mg/dl) | 47.6±13.1 | 0.83 (−1.31 to 2.98) | 0.45 |
| Low HDL level (%) | 28.0 | −2.82 (−10.28 to 4.64) | 0.46 |
| Diabetes | | | |
| Diagnosis after lottery (%) ^{§¶} | 1.1 | 3.83 (1.93 to 5.73) | <0.001 |
| Current use of medication for diabetes (%) [§] | 6.4 | 5.43 (1.39 to 9.48) | 0.008 |
| Depression | | | |
| Positive screening result (%) ^{‡‡} | 30.0 | −9.15 (−16.70 to −1.60) | 0.02 |
| Diagnosis after lottery (%) ^{§¶} | 4.8 | 3.81 (0.15 to 7.46) | 0.04 |
| Current use of medication for depression (%) [§] | 16.8 | 5.49 (−0.46 to 11.45) | 0.07 |

Hypertension

High cholesterol

Diabetes

Depression

Clinical Measures and Health Outcomes

Hypertension and high cholesterol

No significant effects on diagnosis or medication

Diabetes

Increases in diagnosis and medication

Depression

No significant effects on medication

Significant increase in diagnosis

Significant decrease in positive screen results

Results

Clinical Measures and Health Outcomes

Health-related Quality of Life and Happiness

Financial Hardship

Health Care Use

Health-related Quality of Life and Happiness

| Variable | Mean Value in Control Group | Change with Medicaid Coverage (95% CI) [†] | P Value |
|--|-----------------------------|---|---------|
| Health-related quality of life | | | |
| Health same or better vs. 1 yr earlier (%) | 80.4 | 7.84 (1.45 to 14.23) | 0.02 |
| SF-8 subscale [‡] | | | |
| Mental-component score | 44.4±11.4 | 1.95 (0.03 to 3.88) | 0.05 |
| Physical-component score | 45.5±10.5 | 1.20 (−0.54 to 2.93) | 0.18 |
| No pain or very mild pain (%) | 56.4 | 1.16 (−6.94 to 9.26) | 0.78 |
| Very happy or pretty happy (%) | 74.9 | 1.18 (−5.85 to 8.21) | 0.74 |

Health-related Quality of Life and Happiness

Increase

The proportion of people who reported a same or better health compared with previous 1 year
Mental-component score

No significant change

Physical-component score

Self-reported levels of pain

Self-reported levels of happiness

Results

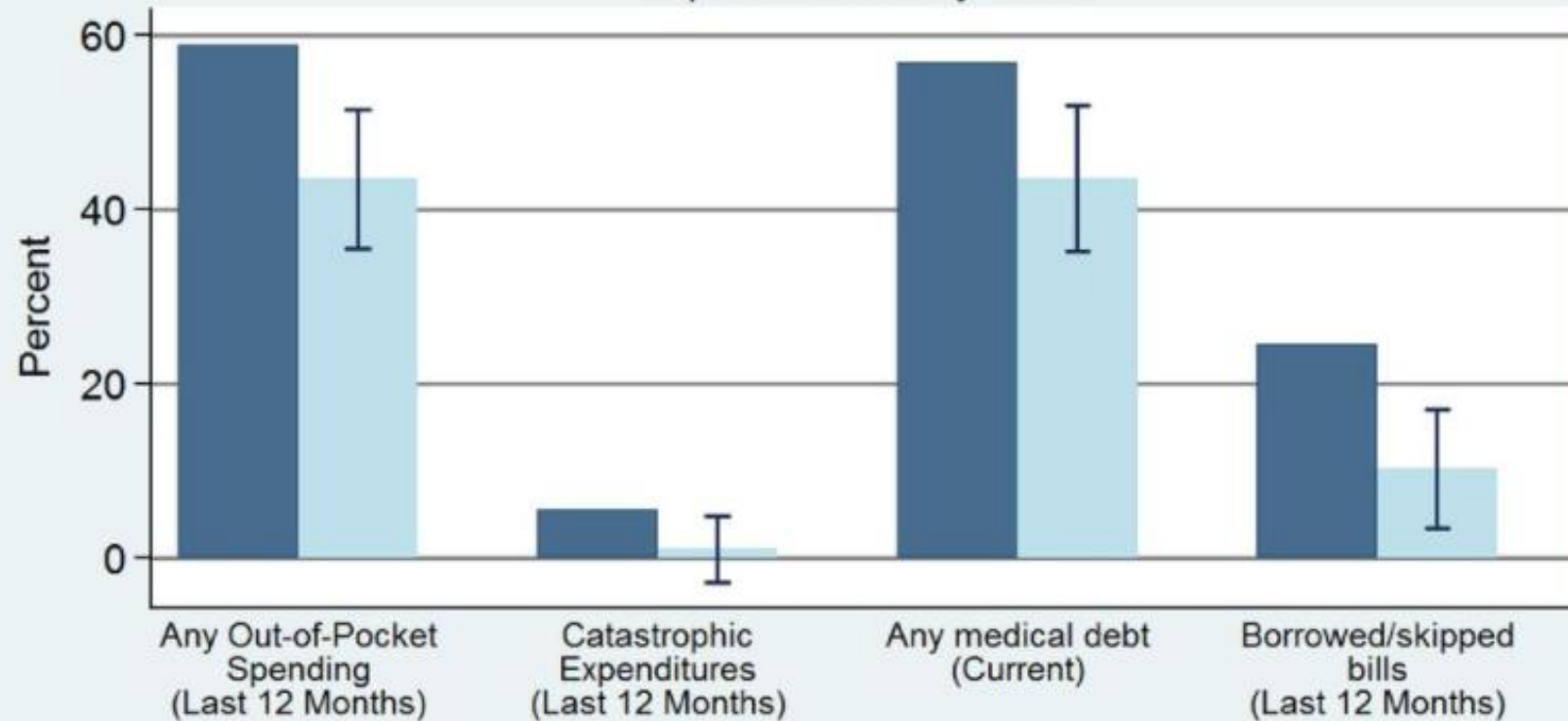
Clinical Measures and Health Outcomes

Health-related Quality of Life and Happiness

Financial Hardship

Health Care Use

Financial Hardship Inperson Survey Data



Financial
Hardship

| Variable | Mean Value in Control Group | Change with Medicaid Coverage (95% CI) [†] | P Value |
|--|-----------------------------|---|---------|
| Any out-of-pocket spending (%) | 58.8 | −15.30 (−23.28 to −7.32) | <0.001 |
| Amount of out-of-pocket spending (\$) | 552.8±1219.5 | −215.35 (−408.75 to −21.95) | 0.03 |
| Catastrophic expenditures (%) [‡] | 5.5 | −4.48 (−8.26 to −0.69) | 0.02 |
| Any medical debt (%) | 56.8 | −13.28 (−21.59 to −4.96) | 0.002 |
| Borrowed money to pay bills or skipped payment (%) | 24.4 | −14.22 (−21.02 to −7.43) | <0.001 |

Financial Hardship

An obvious reduction in financial strain/hardship from medical costs

- Any Out-of-Pocket spending
- Catastrophic expenditures (out-of-pocket medical expenses exceeding 30% of income)
- Any medical debt
- Borrowed/skipped bills

Results

Clinical Measures and Health Outcomes

Health-related Quality of Life and Happiness

Financial Hardship

Health Care Use

Health Care Use

| Variable | Mean Value in Control Group | Change with Medicaid Coverage (95% CI) [†] | P Value |
|---|-----------------------------|---|---------|
| Utilization (no. of visits or medications) | | | |
| Current prescription drugs | 1.8±2.8 | 0.66 (0.21 to 1.11) | 0.004 |
| Office visits in past 12 mo | 5.5±11.6 | 2.70 (0.91 to 4.49) | 0.003 |
| Outpatient surgery in past 12 mo | 0.1±0.4 | 0.03 (−0.03 to 0.09) | 0.28 |
| Emergency department visits in past 12 mo | 1.0±2.0 | 0.09 (−0.23 to 0.42) | 0.57 |
| Hospital admissions in past 12 mo | 0.2±0.6 | 0.07 (−0.03 to 0.17) | 0.17 |
| Estimate of annual health care spending (\$) [‡] | 3,257.3 | 1,171.63 (199.35 to 2,143.91) | 0.018 |

Health Care Use

Increase

The number of prescription drugs

Office visits

Estimated annual health care spending

(increased by \$1,172, about 35% relative to the control group)

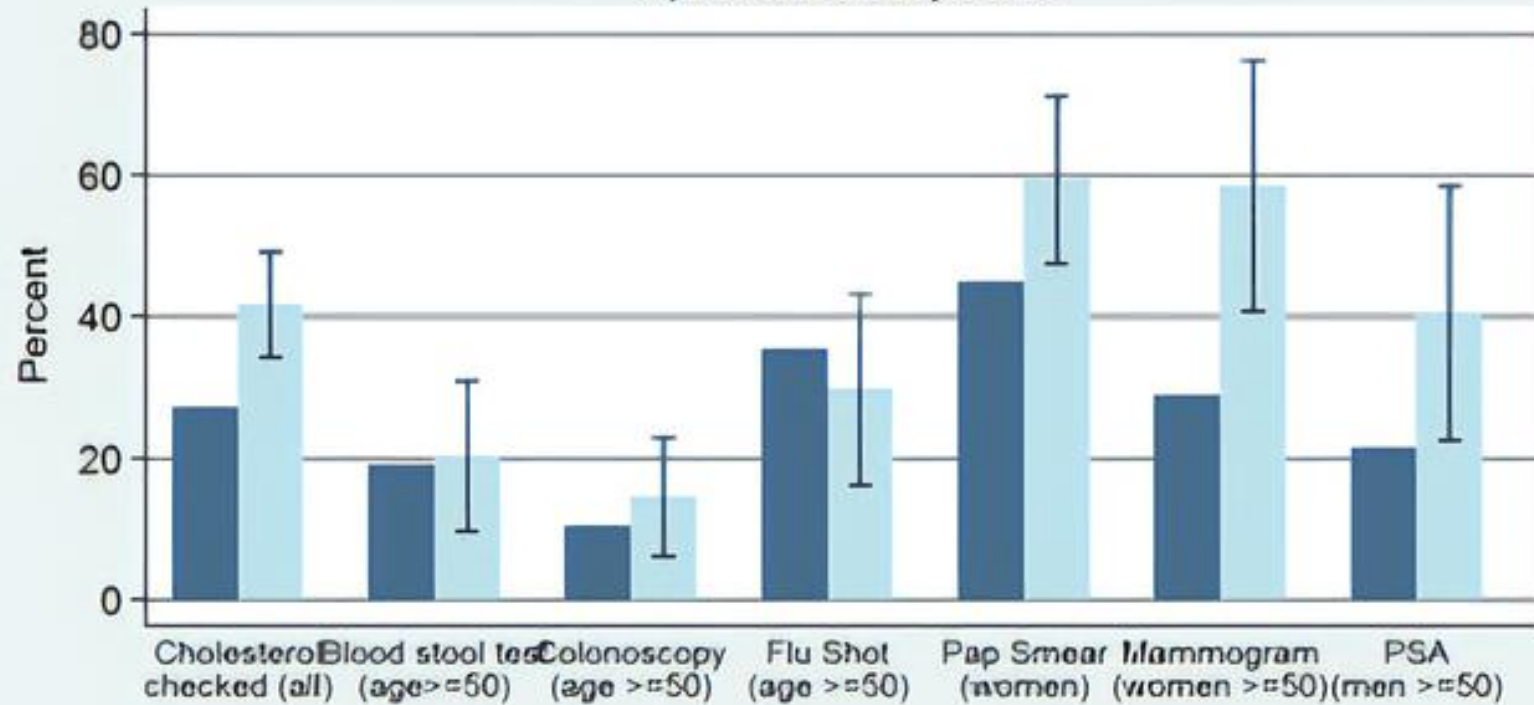
No significant change

Visits to the emergency department

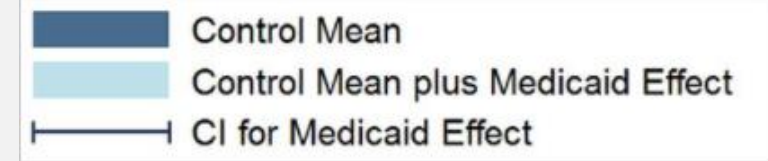
Hospital admissions

Preventive Care (Last 12 Months)

Inperson Survey Data



Preventive Care



| Variable | Mean Value in Control Group | Change with Medicaid Coverage (95% CI)† | P Value |
|---|-----------------------------|---|---------|
| Preventive care in past 12 mo (%) | | | |
| Cholesterol-level screening | 27.2 | 14.57 (7.09 to 22.04) | <0.001 |
| Fecal occult-blood test in persons ≥50 yr | 19.1 | 1.26 (−9.44 to 11.96) | 0.82 |
| Colonoscopy in persons ≥50 yr | 10.4 | 4.19 (−4.25 to 12.62) | 0.33 |
| Flu shot in persons ≥50 yr | 35.5 | −5.74 (−19.31 to 7.83) | 0.41 |
| Papanicolaou smear in women | 44.9 | 14.44 (2.64 to 26.24) | 0.016 |
| Mammography in women ≥50 yr | 28.9 | 29.67 (11.96 to 47.37) | 0.001 |
| PSA test in men ≥50 yr | 21.4 | 19.18 (1.14 to 37.21) | 0.037 |

Perceived access of care, smoking status and obesity

| Variable | Mean Value in Control Group | Change with Medicaid Coverage (95% CI) [†] | P Value |
|--|-----------------------------|---|---------|
| Perceived access to and quality of care (%) | | | |
| Had a usual place of care | 46.1 | 23.75 (15.44 to 32.06) | <0.001 |
| Received all needed care in past 12 mo | 61.0 | 11.43 (3.62 to 19.24) | 0.004 |
| Care was of high quality, if received, in past 12 mo | 78.4 | 9.85 (2.71 to 17.00) | 0.007 |
| Smoking status and obesity (%) | | | |
| Current smoker | 42.8 | 5.58 (−2.54 to 13.70) | 0.18 |
| Obese | 41.5 | 0.39 (−7.89 to 8.67) | 0.93 |

Health Care Use

Increase

some preventive care and screening services

Perceived access to care

No significant change

Smoking status

Obesity status

Discussion and Possible Policy Lessons

Q. “Medicaid is worthless?”

Q. “Medicaid is worthless?”

→ Not true.

1~2 years after expanded access to Medicaid...

- ✓ Increased overall health care use
- ✓ Increased preventive care, access and quality
- ✓ Improved self-reported health and depression
- ✓ Reduced financial hardship
- ✓ No significant change in specific physical measures

If a goal of health insurance is to “provide financial security by protecting people from catastrophic health care expenses if they become sick or injured,” then Oregon’s Medicaid expansion has already been highly effective.

Q. “Health insurance expansion saves money?”

Q. “Health insurance expansion saves money?”

→ In short run: not true.

Increases in health care use and cost.

→ In long run: remains to be seen.

Further improvements in health?

Thanks for listening!