

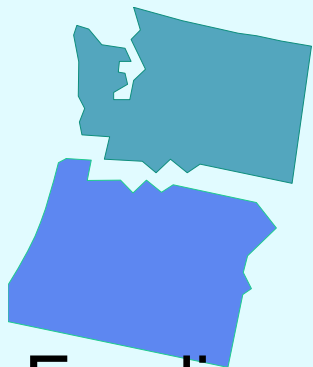
Access to Opiate Treatment and Arrest Outcomes in 2 Western States

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Salem, Oregon
December 6, 2005

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Portland, Oregon



This draft is intended for review and comments only. It is not intended for citation, quotation, or other use in any form.



Acknowledgements

Funding source

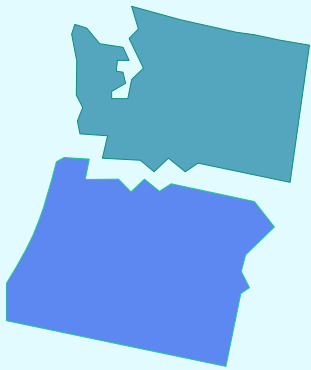
- NIDA R01 DA015060

Collaborators

- Dennis McCarty, Bentson McFarland, OHSU
- Toni Krupski, Kevin Campbell, DASA
- John Mullooly, KCHR
- Roy Gabriel, Wyndy Wiitala, Kelly Vander Ley, RMC

Data access and other support

- Oregon's DHS - OMAS and OMAP
- Washington's DSHS – DASA and MAA



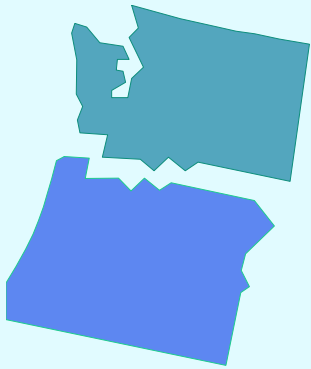
Substance Abuse Treatment and Role of Medicaid

Medicaid

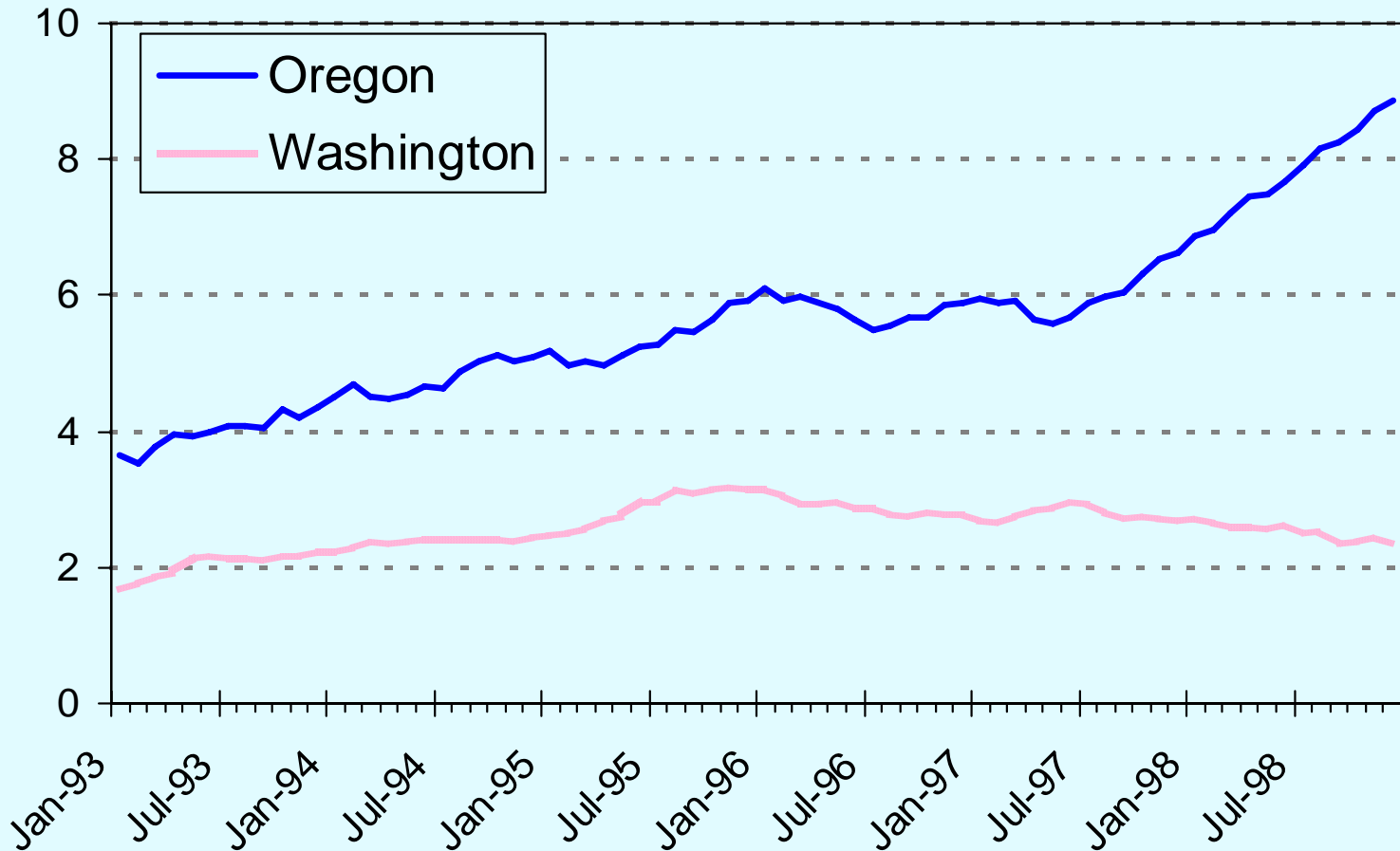
- Primary payer of publicly funded substance abuse treatment
- Half the states cover methadone maintenance in benefit.
- Important from both the client and provider's perspective

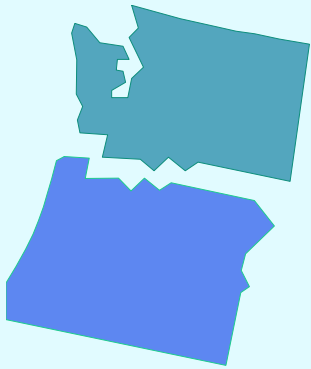
State Context

- Oregon: Under the Oregon Health Plan,
 - Outpatient drug free and methadone were covered
 - expanded eligibility resulted in a large influx of adults addicted to opiates
- Washington:
 - Methadone also covered but funds constrained by limited Medicaid match and constrains on size and location of methadone clinics

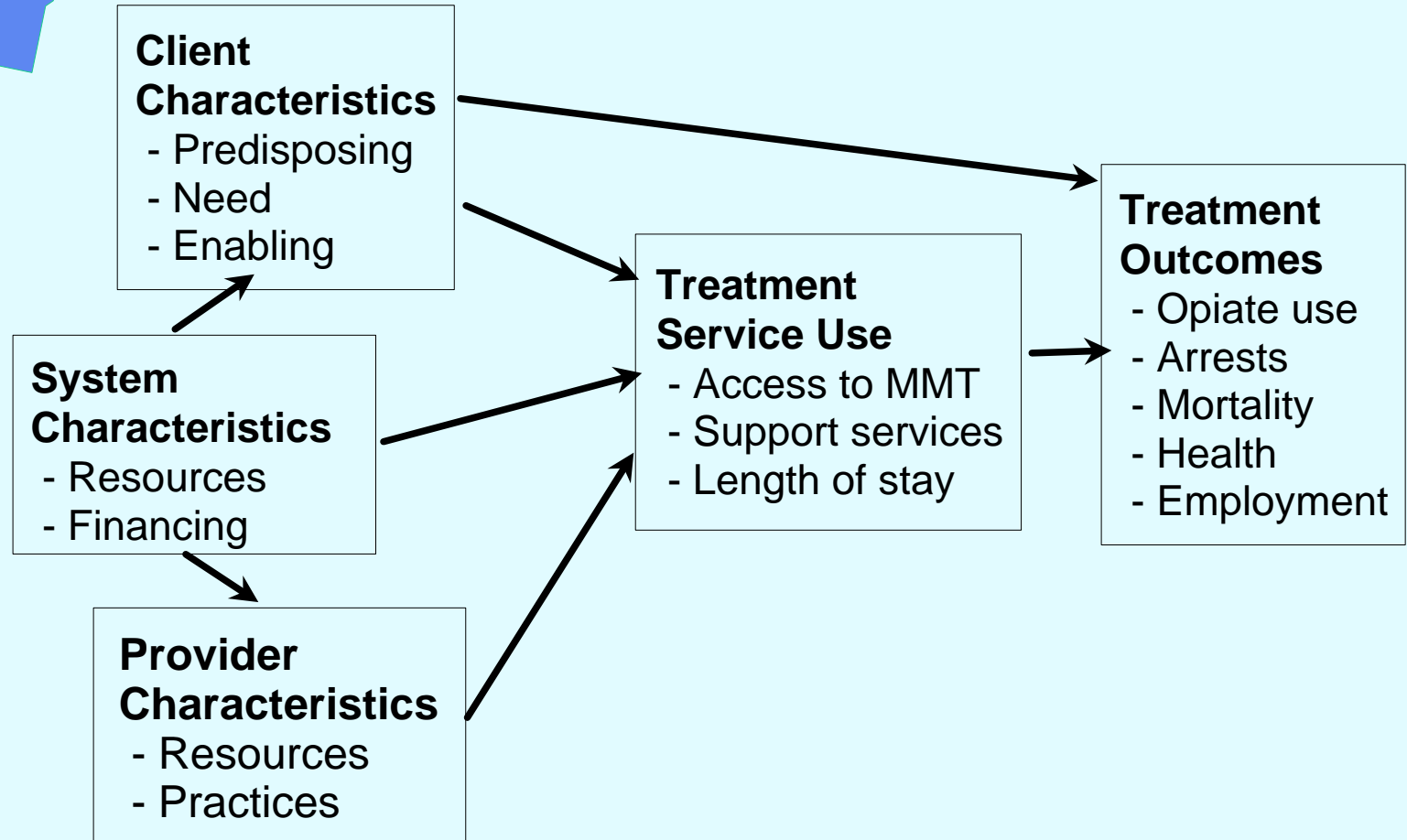


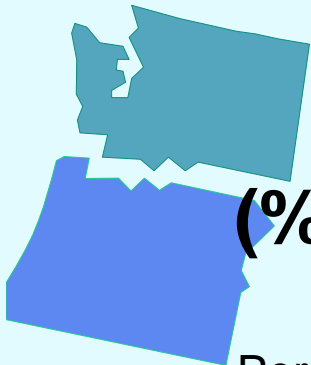
Methadone Utilization Rates (MMT users per 1000 enrolled)





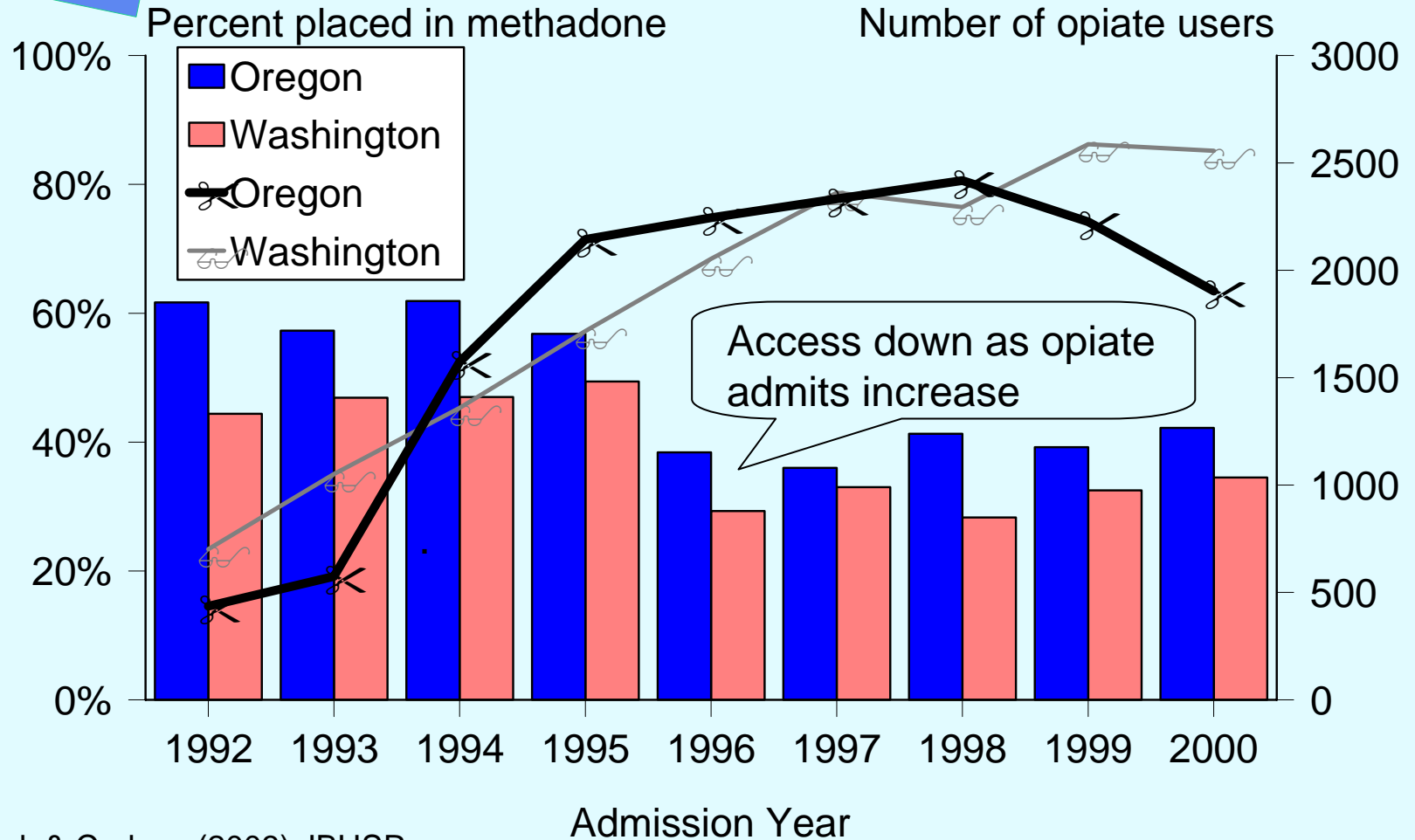
Logic Model

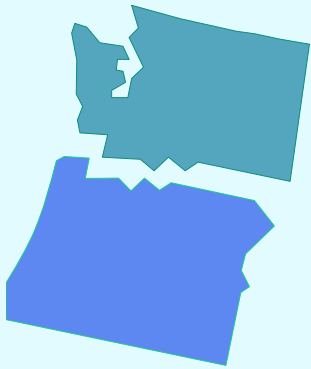




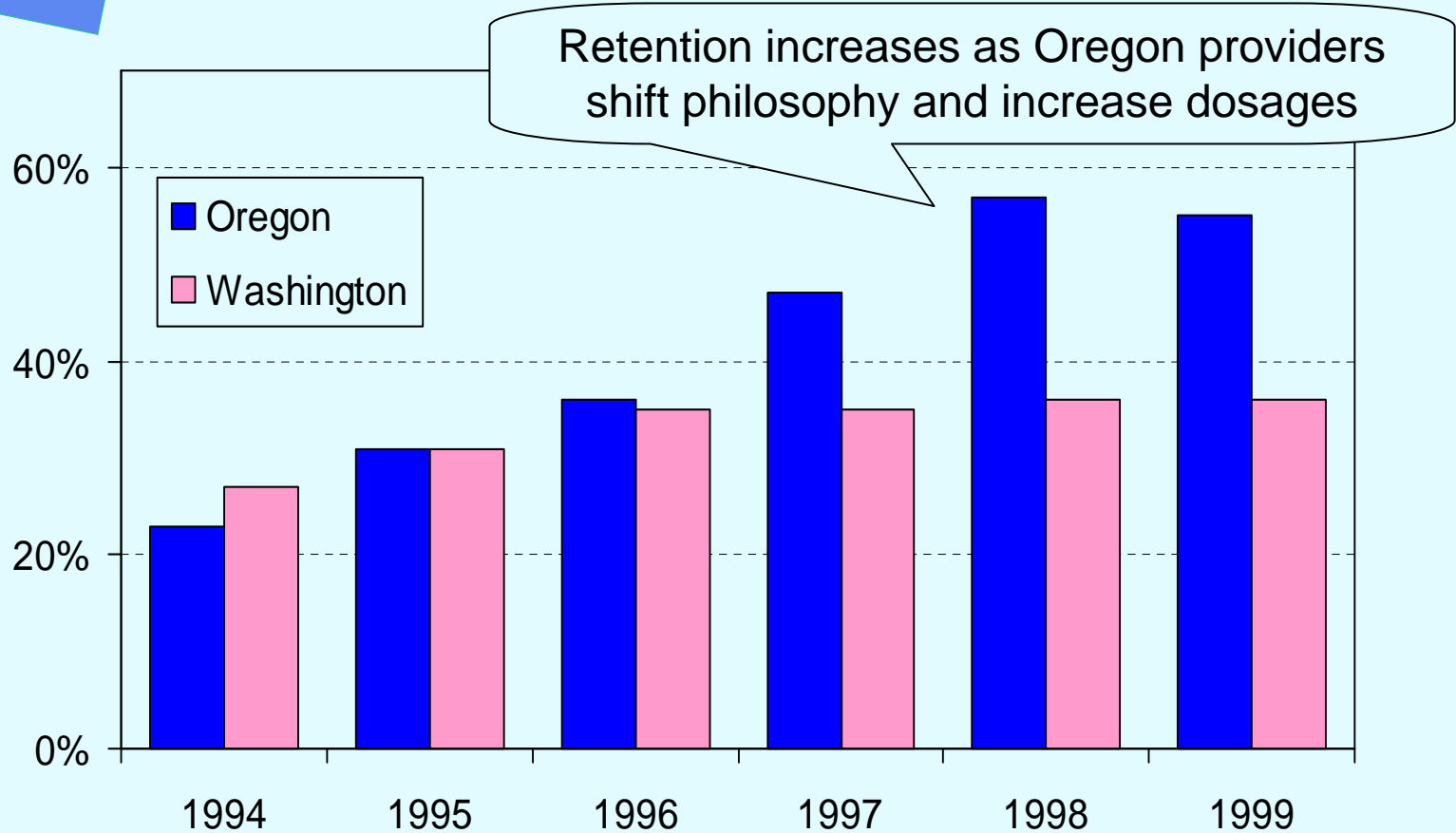
Methadone Access Rates

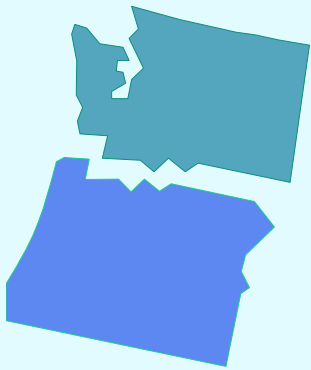
(% of opiate admissions placed in MMT)



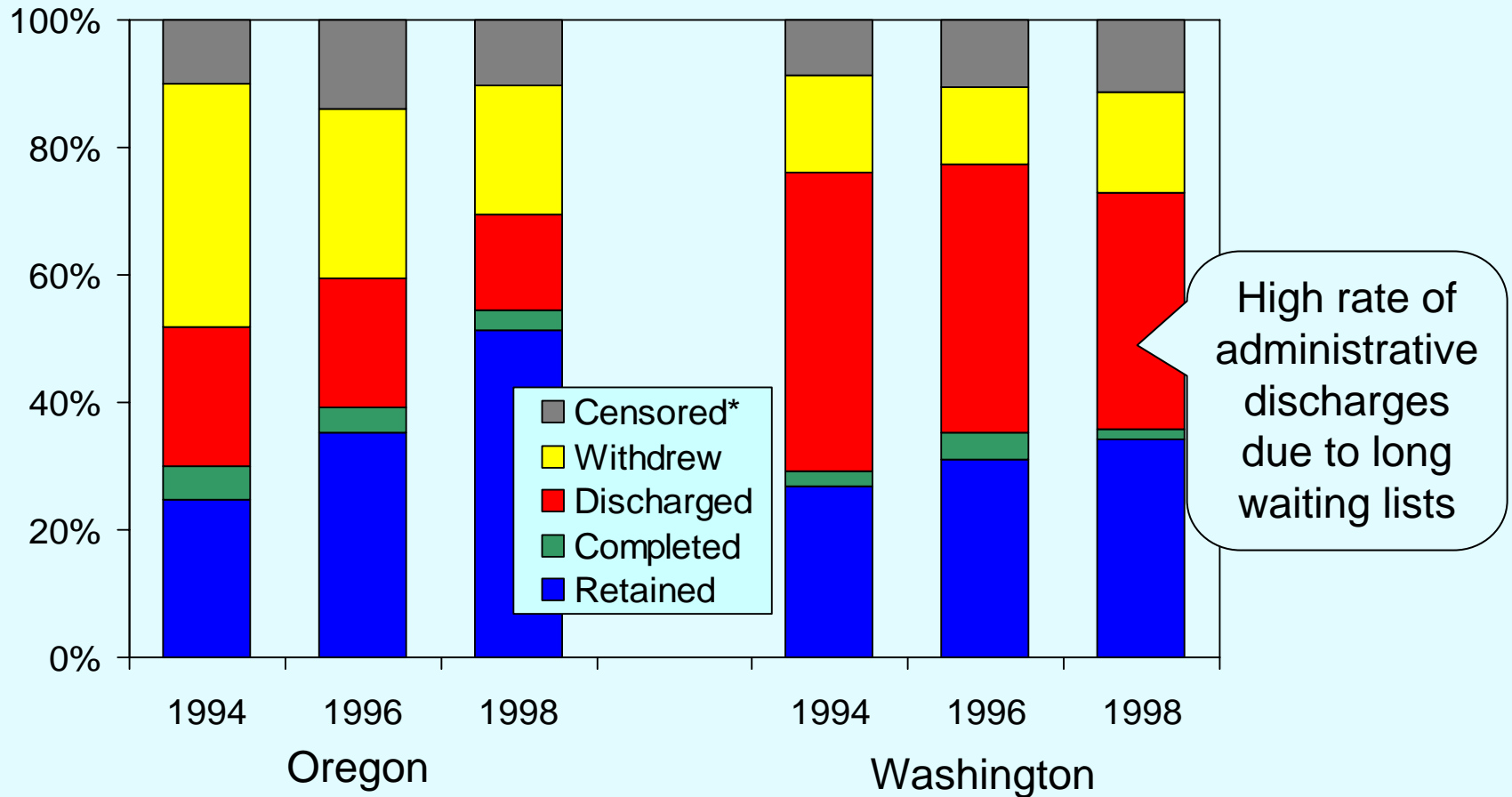


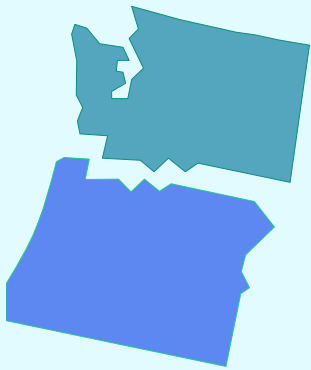
Methadone Retention (1Yr) Rates as Percent of Opiate Admissions





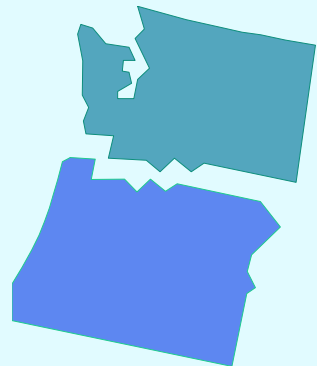
Status after One Year as Percent of Opiate Admissions



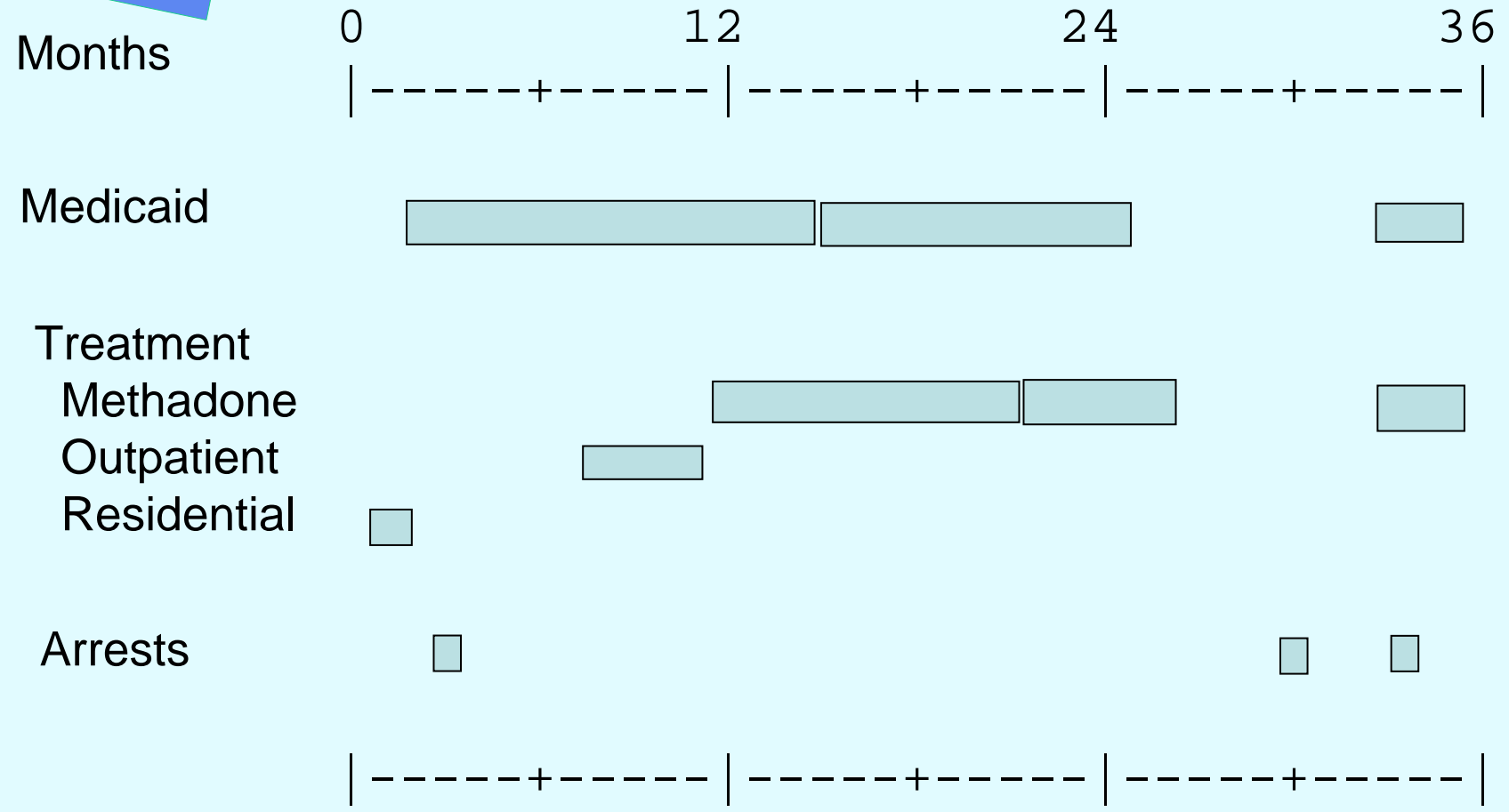


Questions

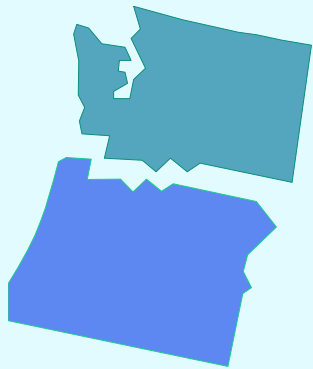
- What is the relationship of Medicaid eligibility to continued enrollment in a methadone maintenance program?
- What is the relationship of enrollment in a methadone program over time to the likelihood of arrest?
- Can we replicate these findings in two states with different patterns of financing for opiate treatment?



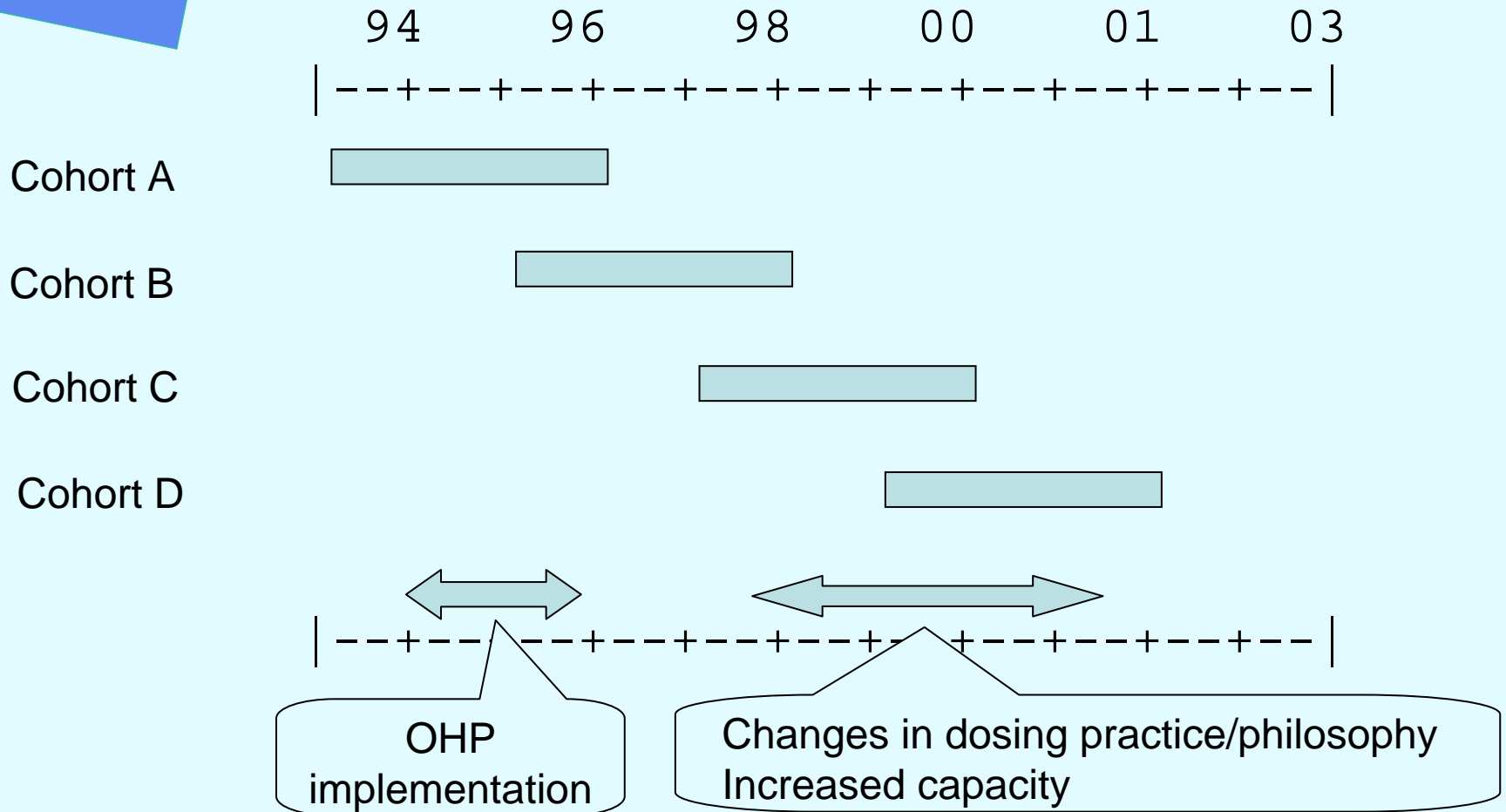
Complexities of Time: Patterns for Hypothetical Client



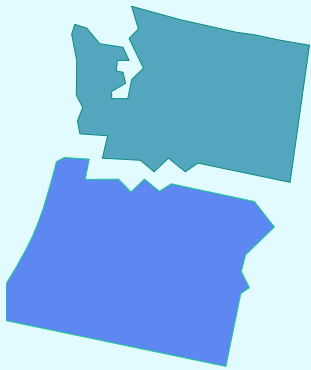
Solution: Conduct longitudinal analysis with time varying independent variables.¹⁰



Complexities of Time: Systemic Forces at Work

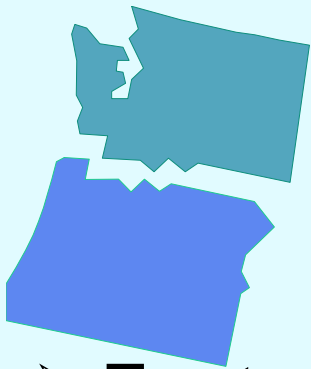


Solution: Distinguish later cohorts from pre-OHP cohorts.



Subjects

- Adults (ages 18-64) admitted to publicly funded treatment for opiate addiction
 - Oregon N = 9,787
 - Washington N = 15,497
- Cohorts admitted from 1993 to 2000
- Follow for 3 years after initial admission



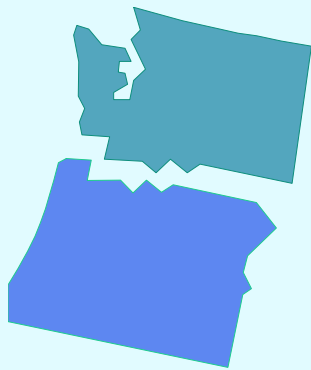
Data Sources

- Treatment history and admission characteristics
 - CPMS (OR) and TARGET (WA)
 - Convert treatment episodes to monthly records for 36 months following an initial opiate admission during the study period

- Medicaid eligibility history
 - Determine eligibility during same months

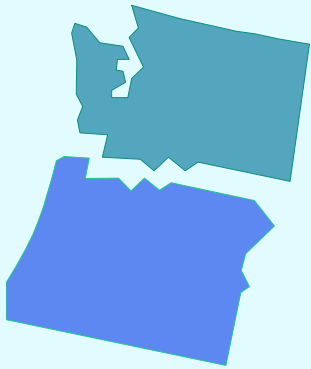
- Arrest history
 - State Police (LEDS - OR)
 - Felony and gross misdemeanors only (mandatory reporting)

- Data Linkage: Used same sophisticated data linkage routine in both states (implemented both deterministic and probabilistic matching algorithms)



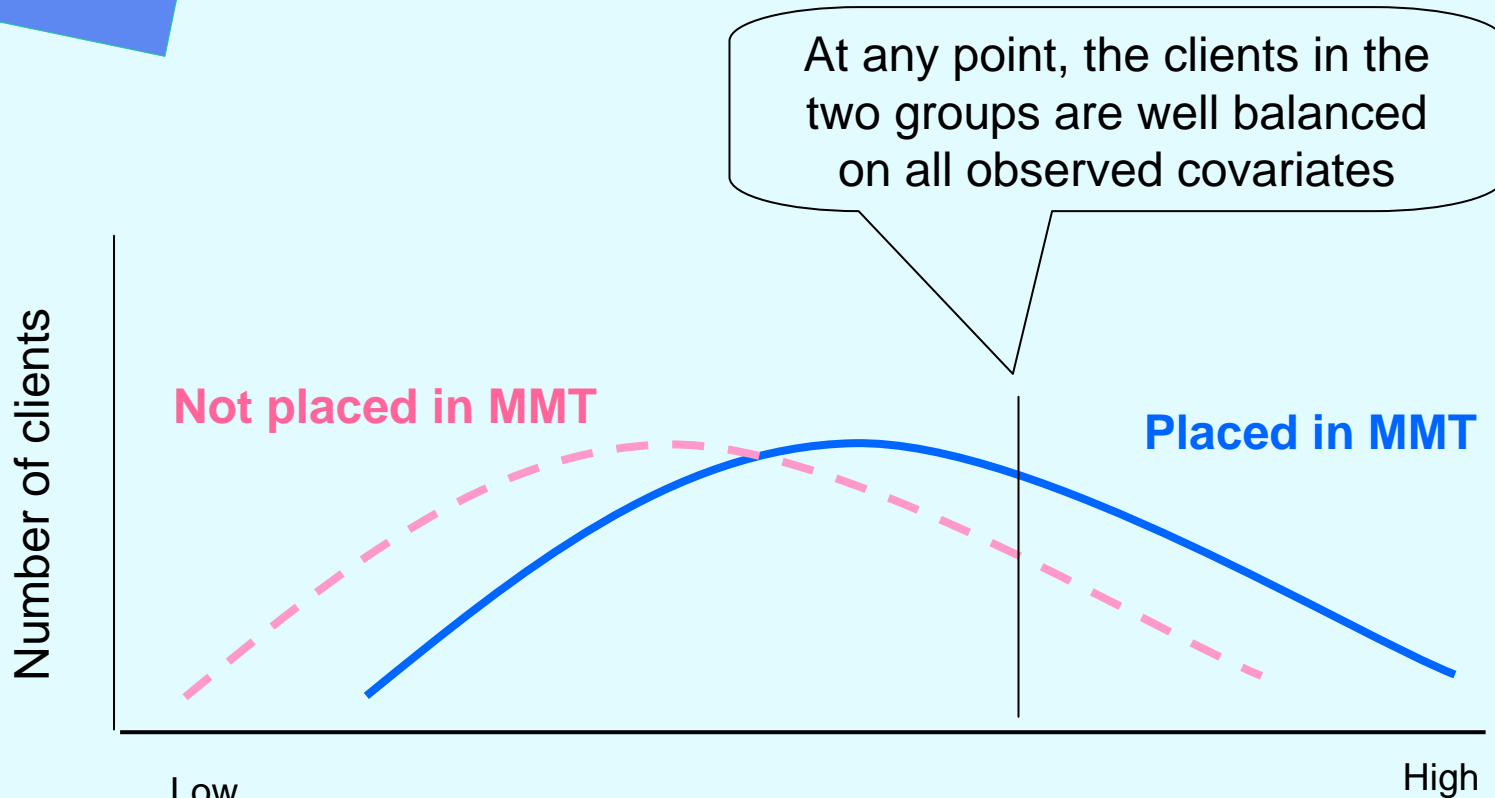
Descriptive Results

- Probability of Medicaid enrollment
 - By Medicaid Status
 - Stratify to controlling for:
 - Propensity for placement in Methadone
 - Months from admission
- Probability of Arrest
 - By Treatment Status
 - Stratify to controlling for:
 - Prior history of arrest
 - Propensity for placement in Methadone
 - Months from admission

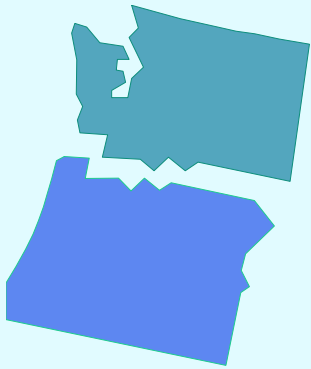


Propensity Score Analysis

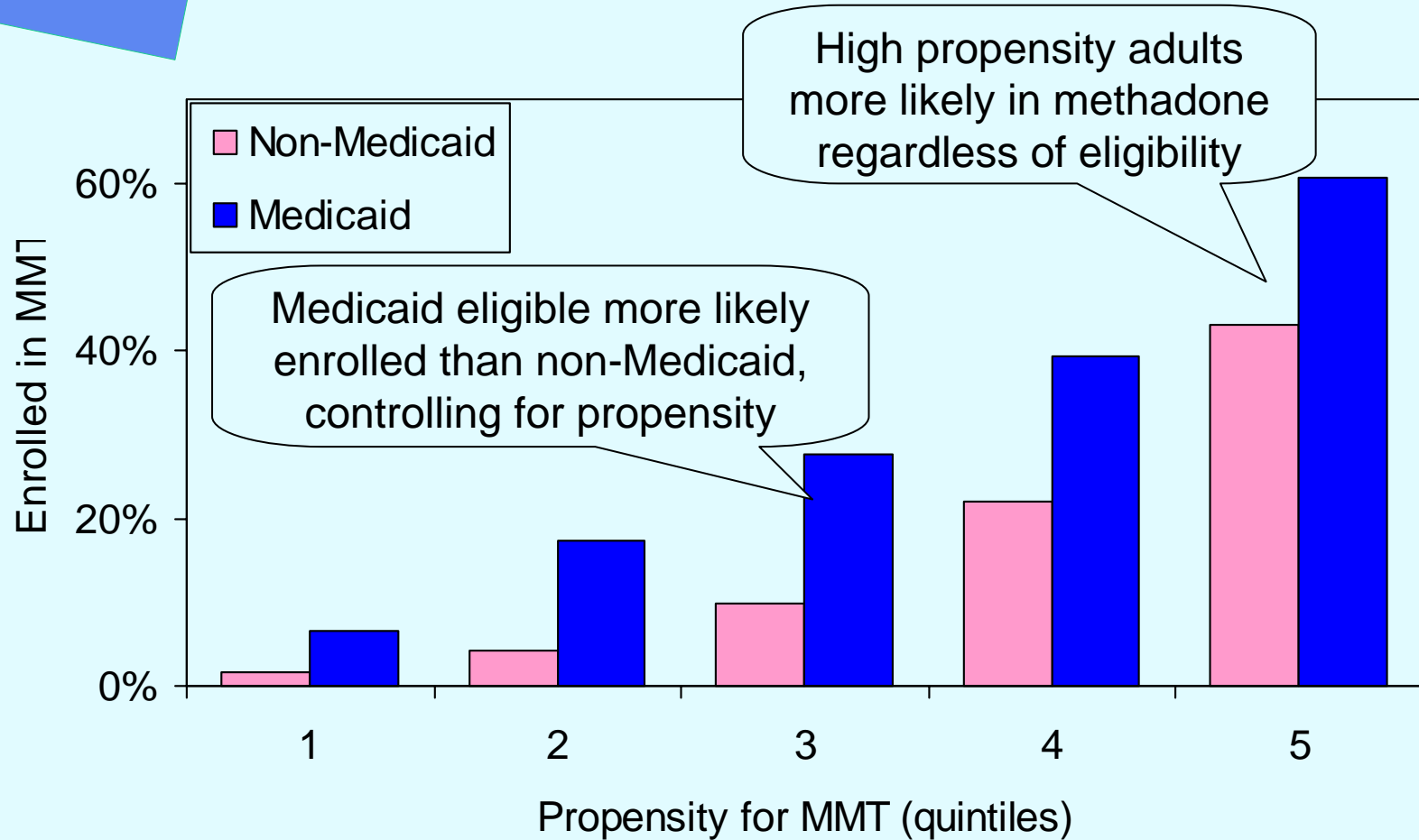
Dealing with non-equivalent groups

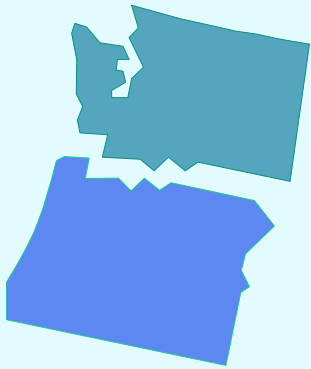


Hypothetical Distribution of Propensity Scores
Predicting Initial Placement in Methadone

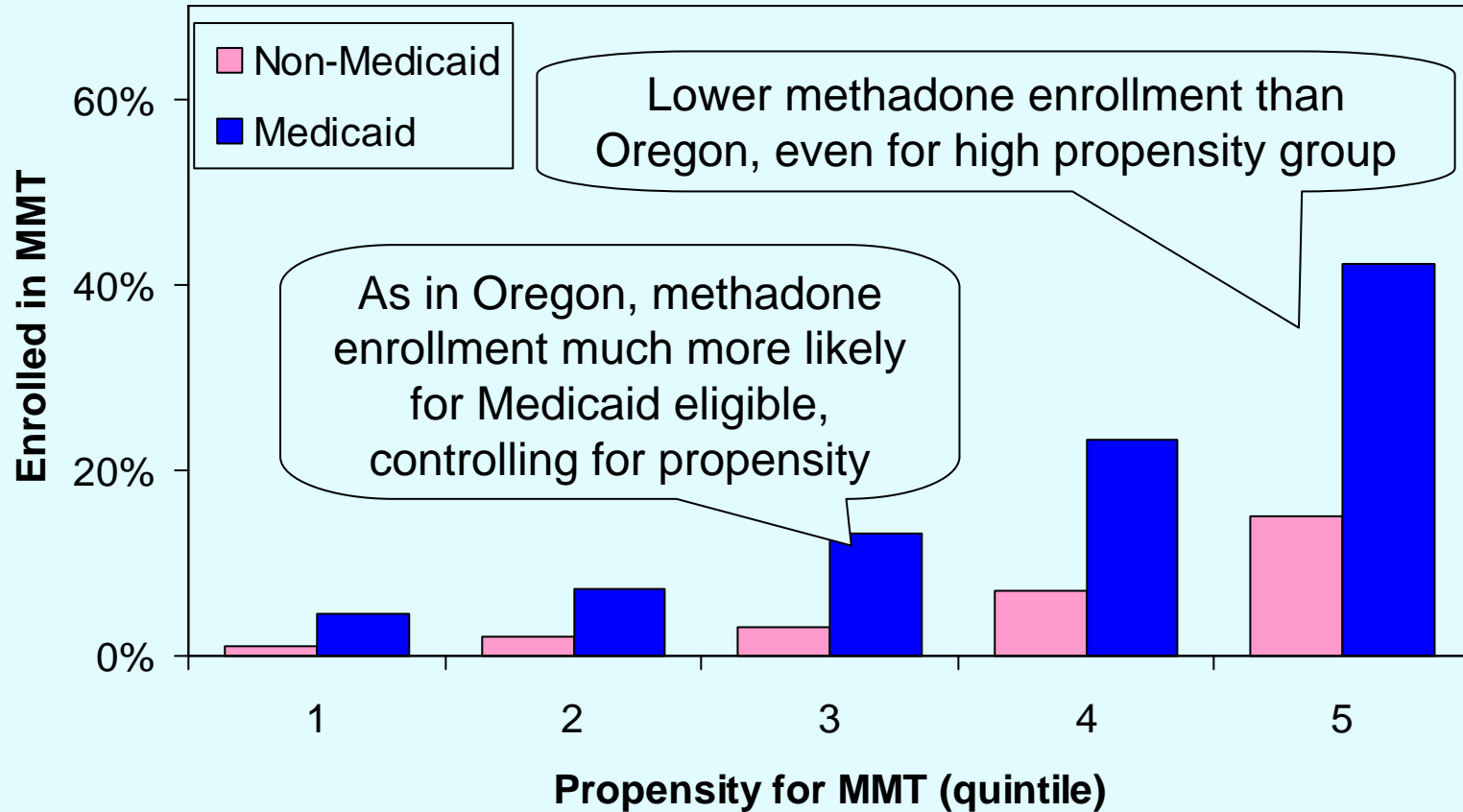


Oregon Methadone Enrollment by Medicaid and Propensity for MMT

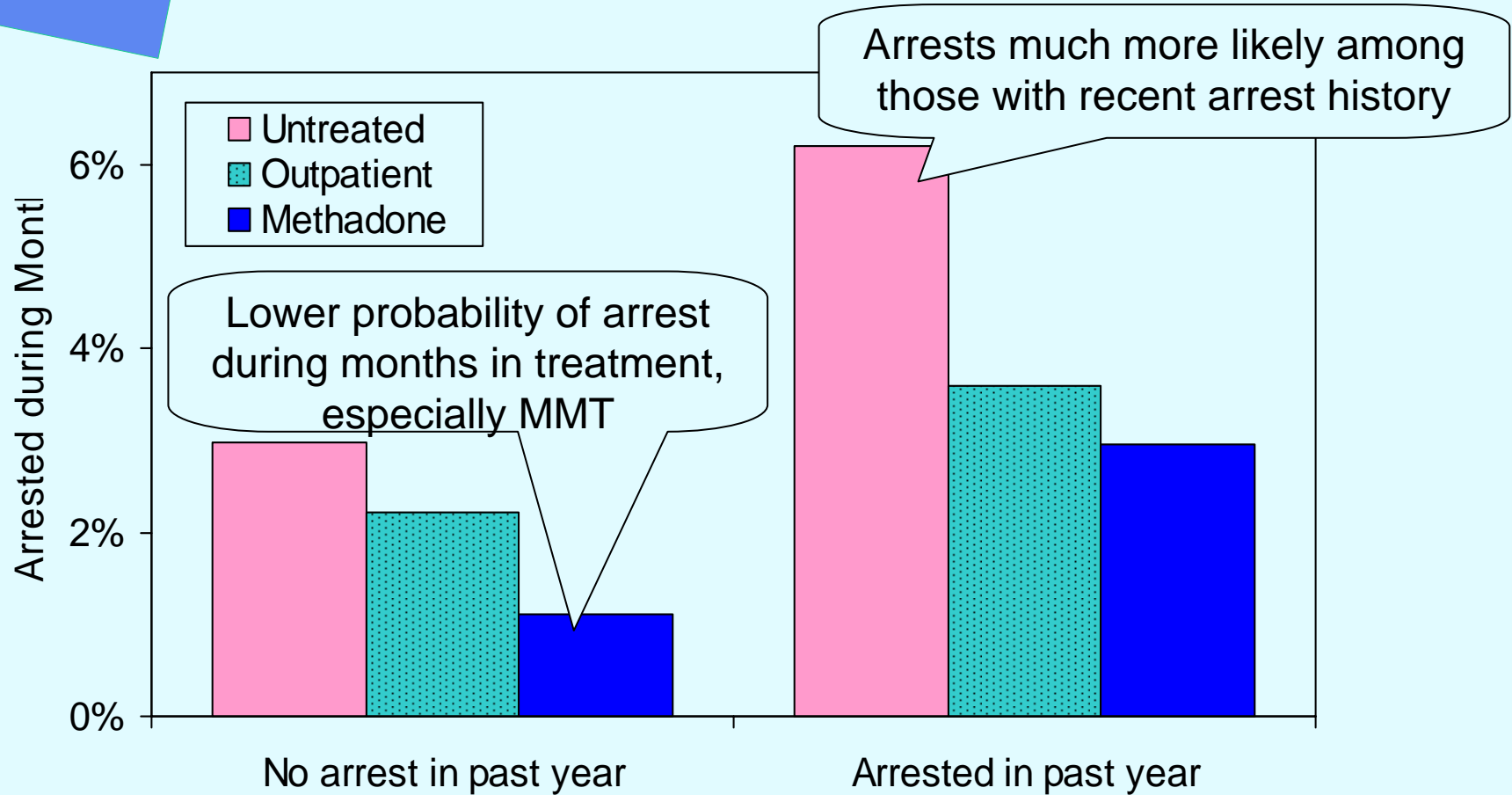
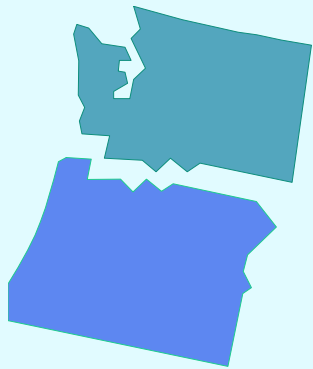




Washington Methadone Enrollment by Medicaid and Quintile on Propensity for MMT

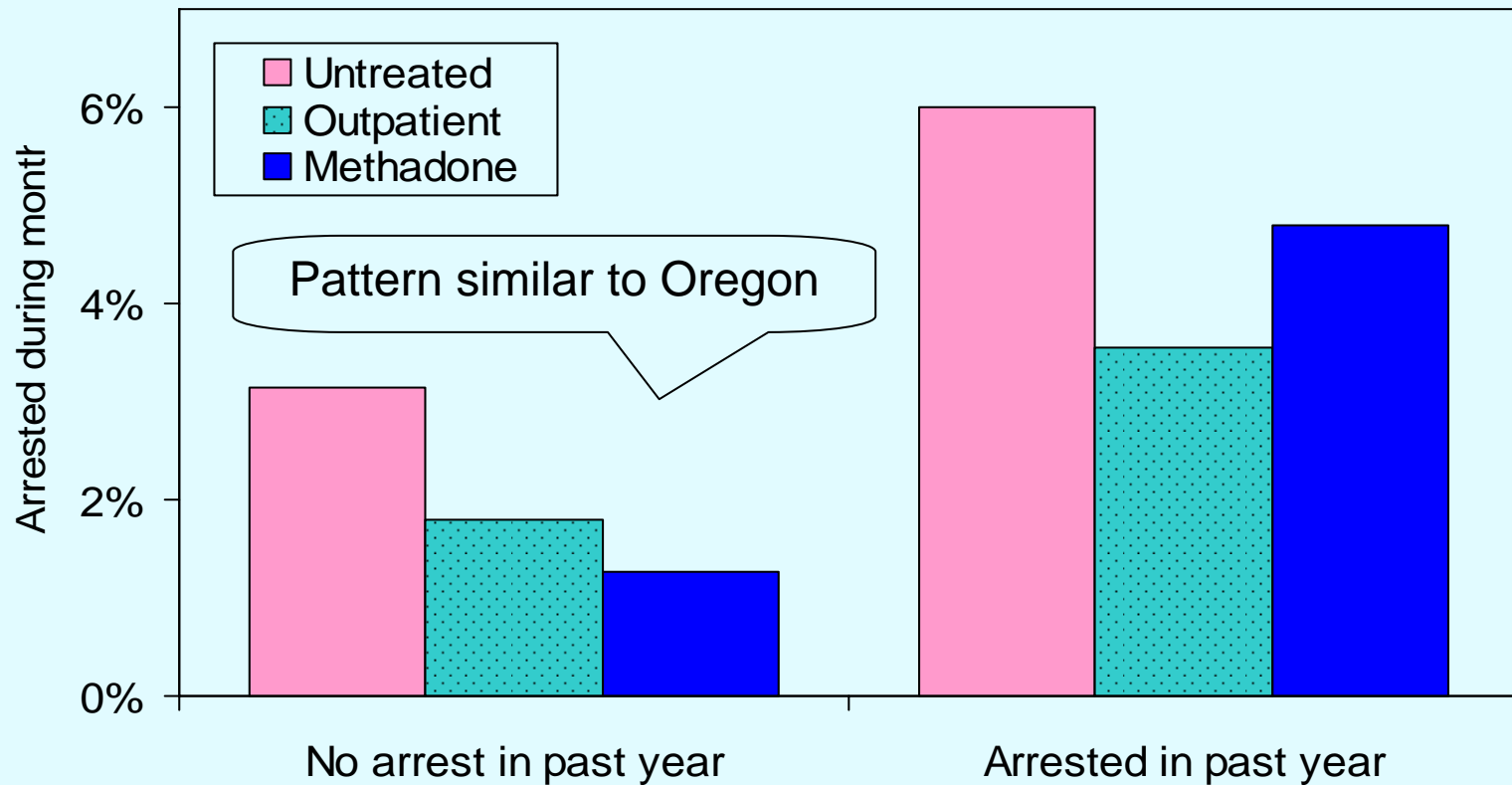
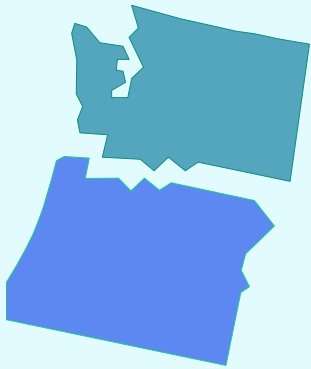


Oregon Felony Arrests by Modality and Arrest History

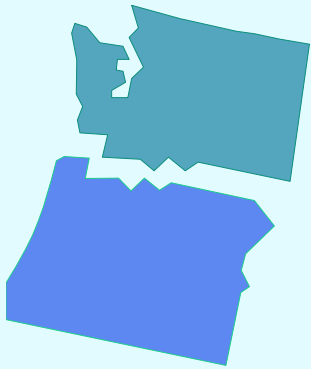


Descriptive analysis with no adjustment of other covariates.

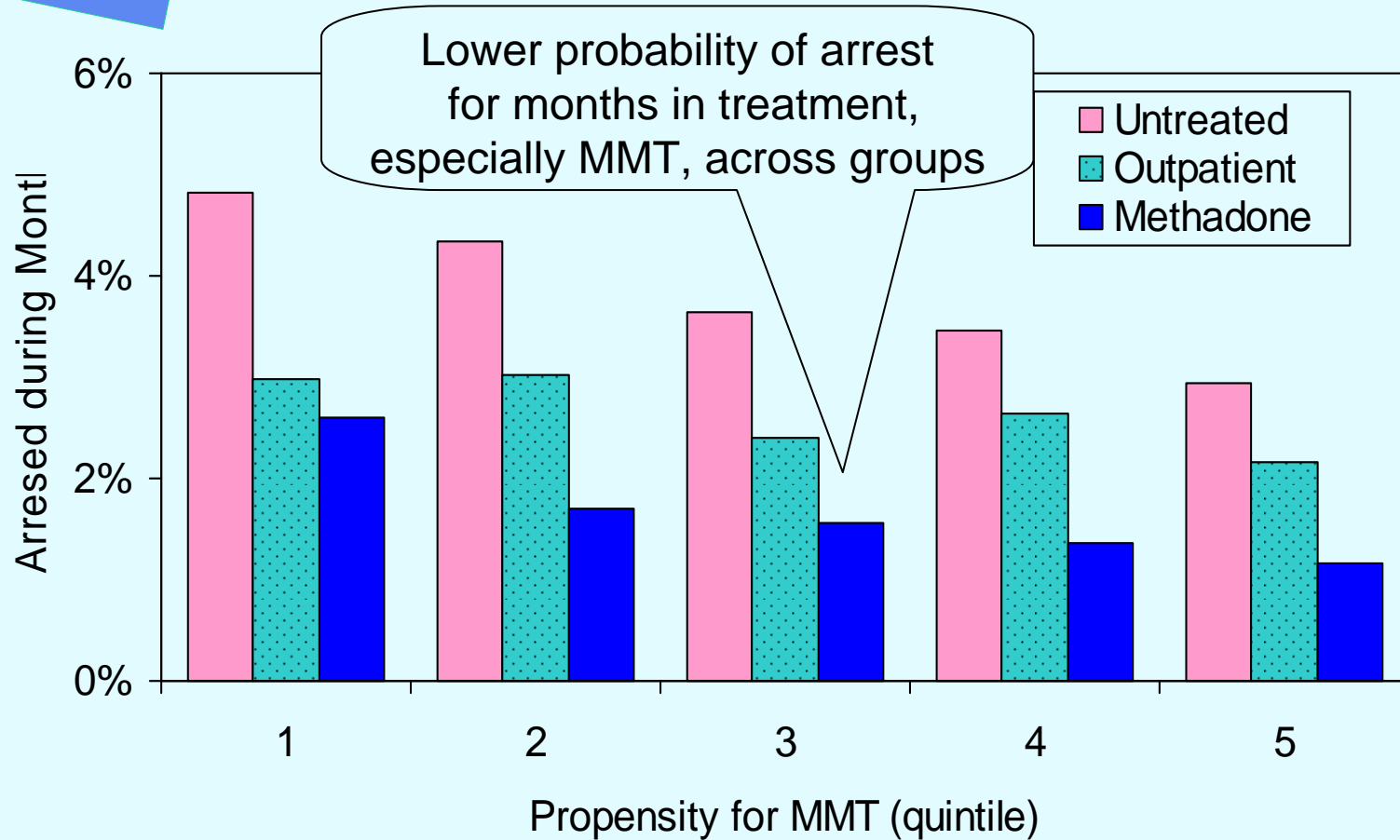
Washington Felony Arrests by Modality and Arrest History



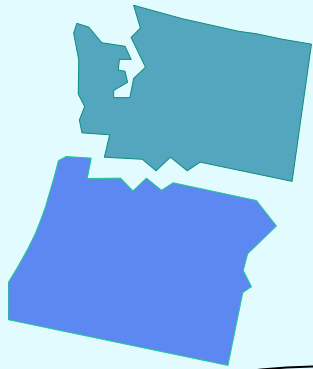
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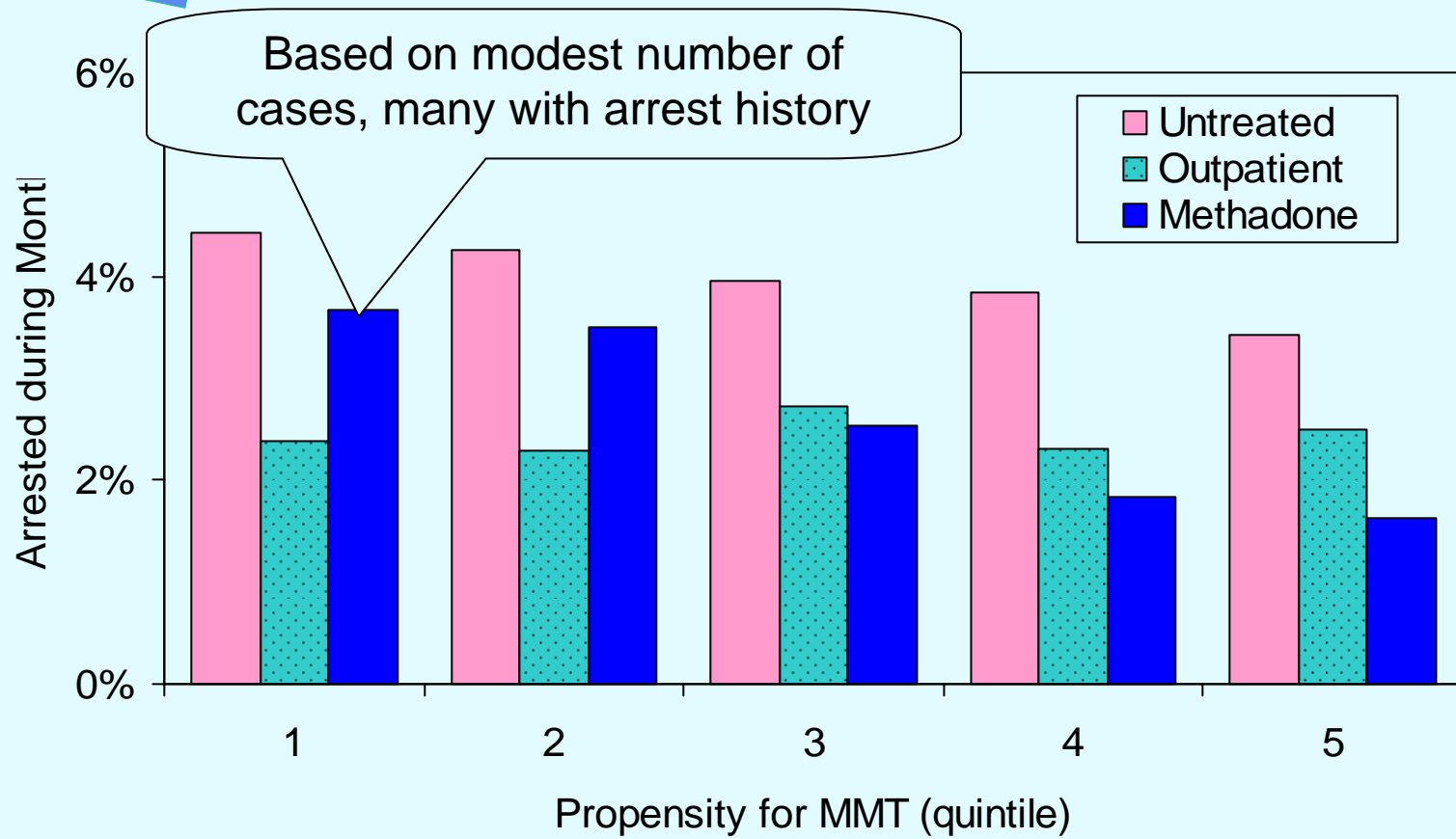
Oregon Felony Arrests by Modality and Propensity for MMT



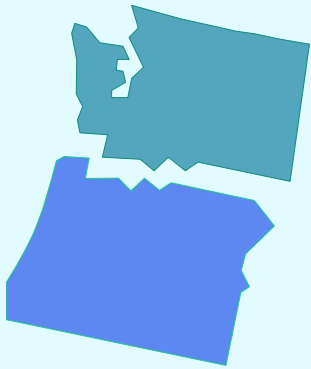
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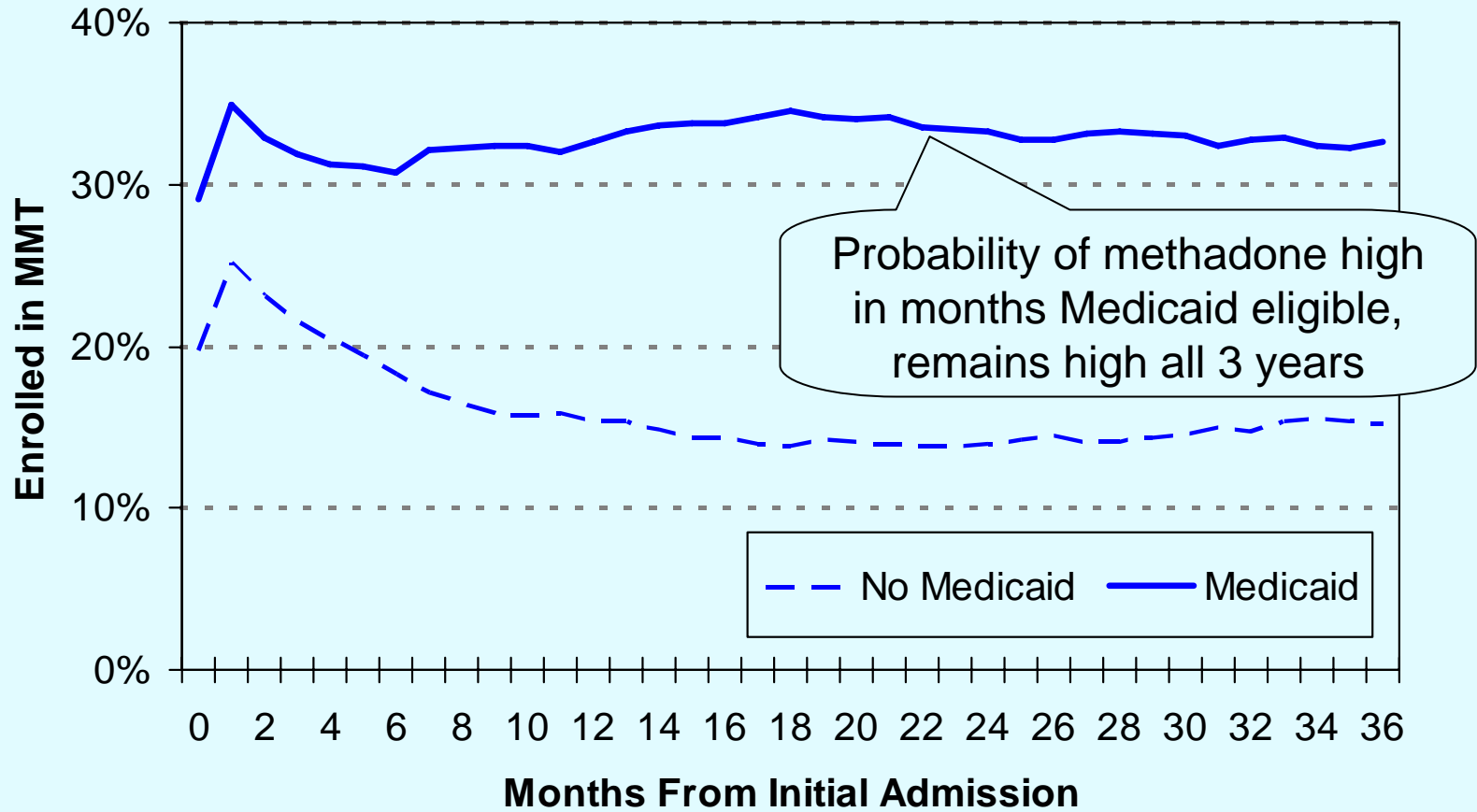
Washington Felony Arrests by Modality and Methadone Propensity



Descriptive analysis with no adjustment of other covariates.

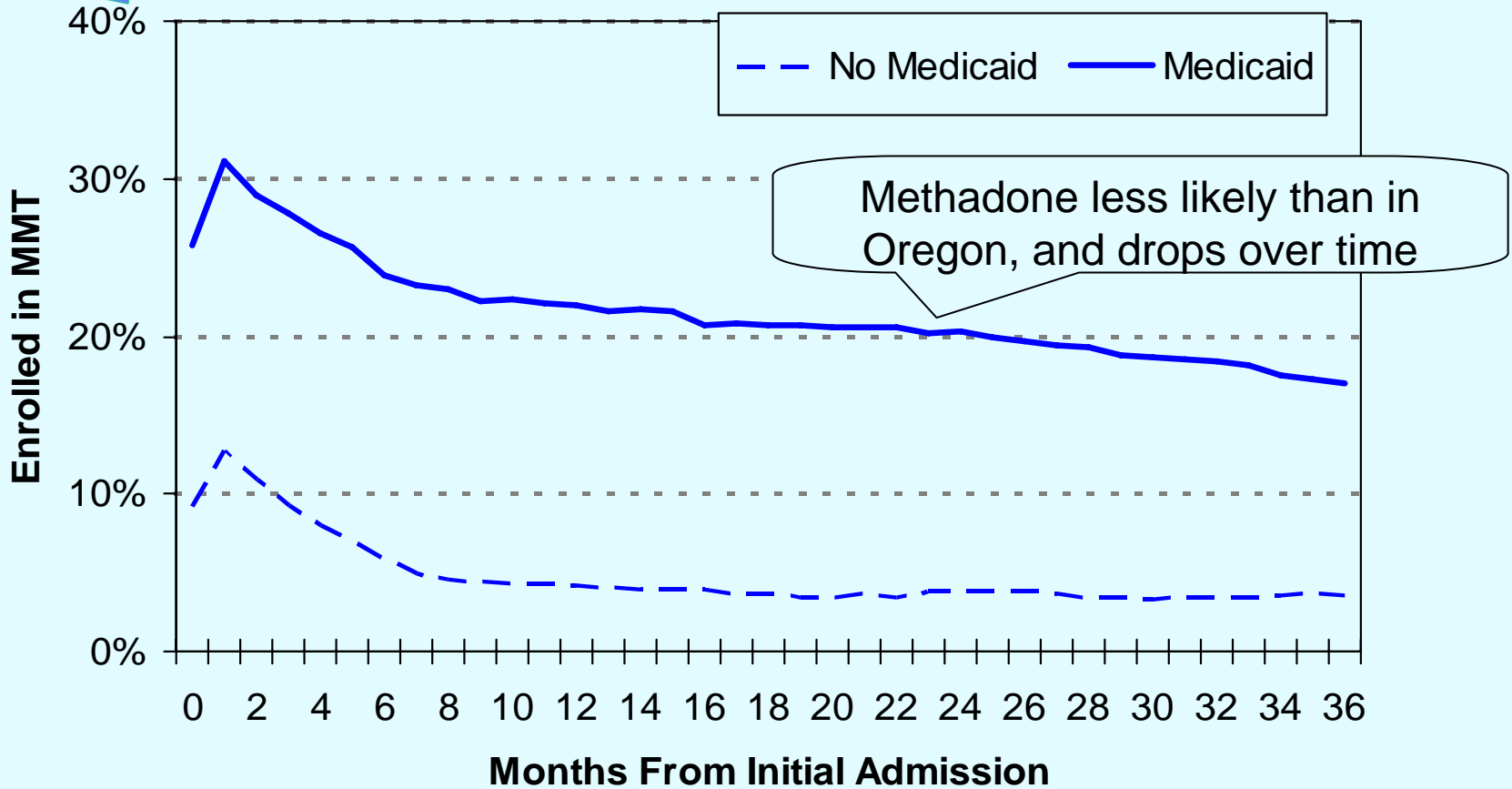


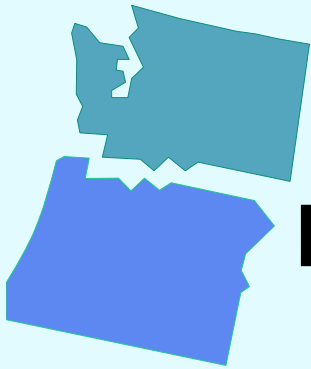
Oregon Methadone Enrollment by Medicaid Eligibility



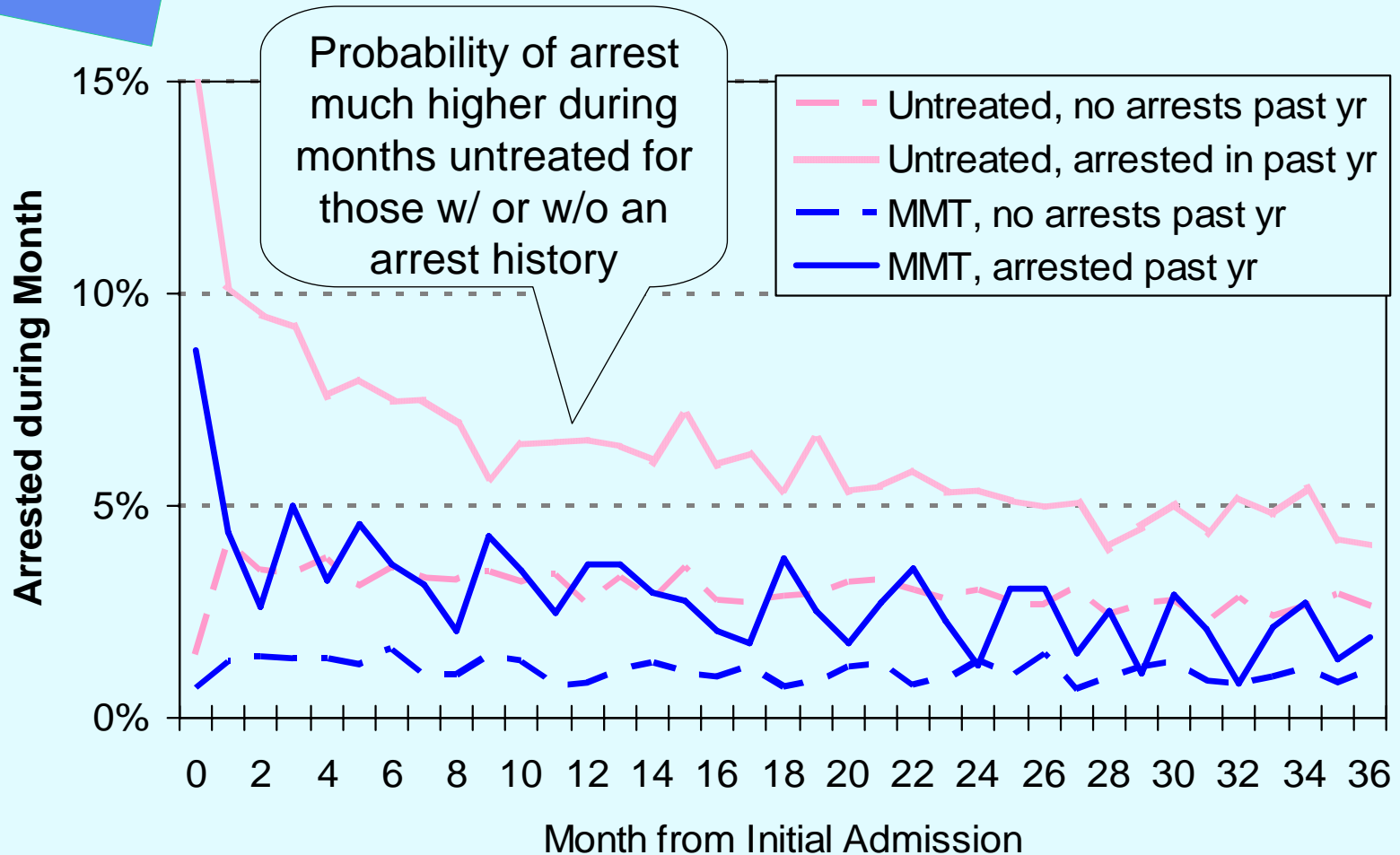


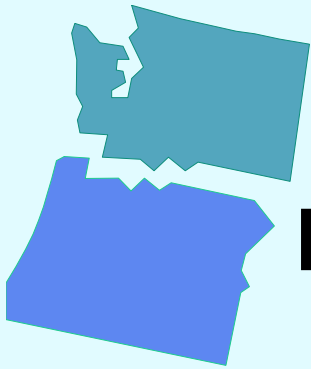
Washington Methadone Enrollment by Medicaid Eligibility



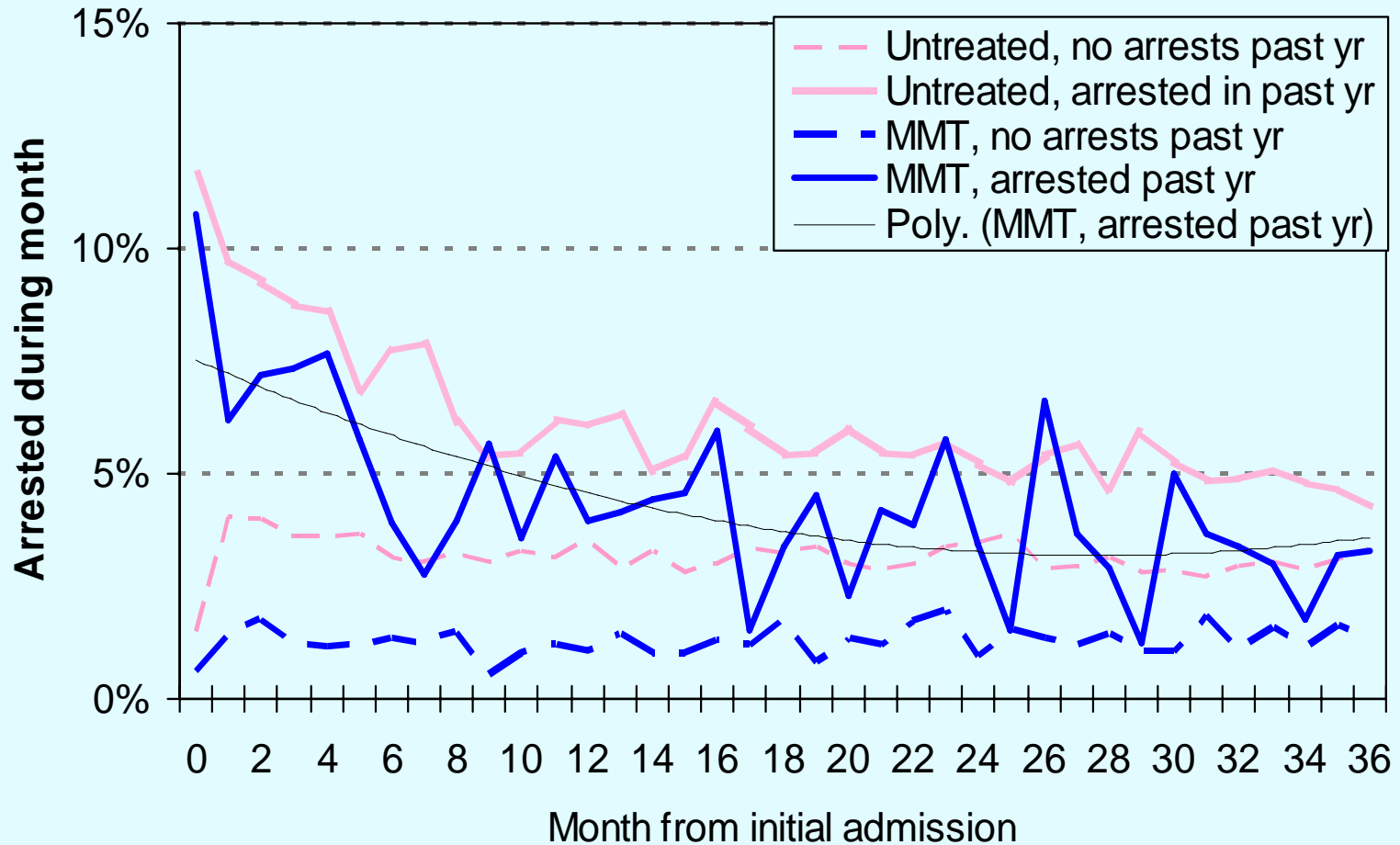


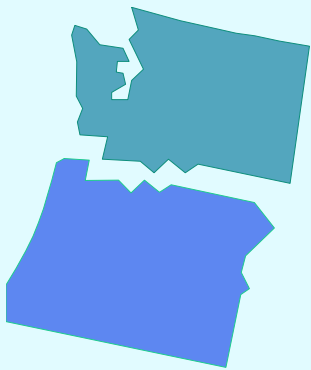
Oregon Felony Arrests by Treatment and Arrest History





Washington Felony Arrests by Treatment and Arrest History





Longitudinal Analysis

Multi-level Mixed Modeling

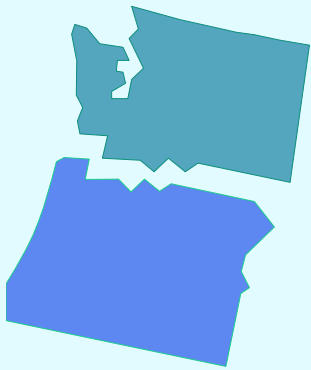
- Time nested within Person
- Mixed (random intercepts and slopes)
- HLM6 (Bryk & Roudenbush)

Outcomes (Binary – logit link function)

- Model A: Odds of MMT enrollment that month
- Model B: Odds of Arrest that month

Time Varying Independent Variables

- Model A: Medicaid eligibility
- Model B: Methadone or Outpatient (7+days)



Longitudinal Analysis (con't)

Time Covariates

- Month from first admission (centered at 12th month)
- Independent Variable
 - Model A: Medicaid
 - Model B: Methadone & Outpatient vs No treatment
- Interaction of Month with Independent Variable

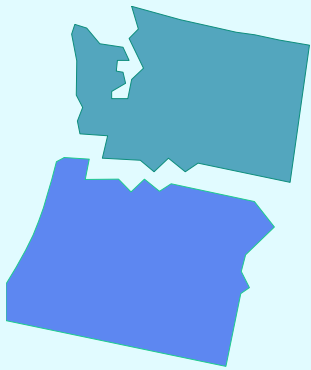
Person Covariates

- Methadone Propensity Score
- Medicaid Propensity Score
- Prior Arrest History (past year)
- Cohort



Other Challenges

- Clients differ greatly in the likelihood of placement in methadone or in likelihood of arrests
Solution: Add person level covariates
- There may be censoring (clients disappear, move, die, etc) but it may not be explicitly reflected in the data
Solution: Exclude months where client does not appear in any data set
- Residential treatment is a controlled setting where arrests would not occur
Solution: Exclude months where client is in residential setting for 2+ weeks



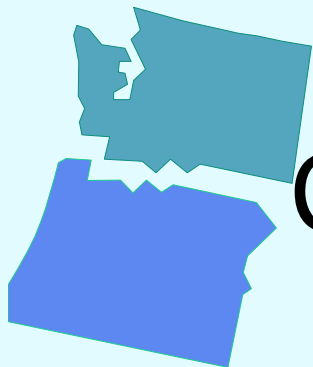
Preliminary Longitudinal Results

(36 months following first opiate admission
for cohorts presenting 1993-2000)

Outcome	Independent Variable (Time Varying)	Oregon Odds Ratio	Washington Odds Ratio
Enrolled in methadone during month	Medicaid	9.7	3.9
Arrested during month	Methadone	.29	.30

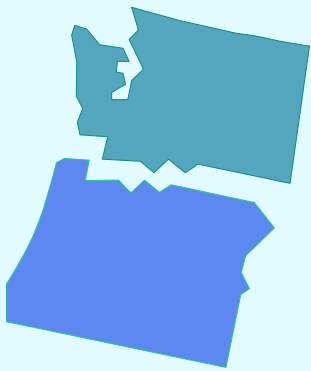
HLM Level 1 model = month from admission, time varying covariate, interactions

HLM Level 2 model = propensity for MMT and for Medicaid, prior arrests, cohorts ²⁹



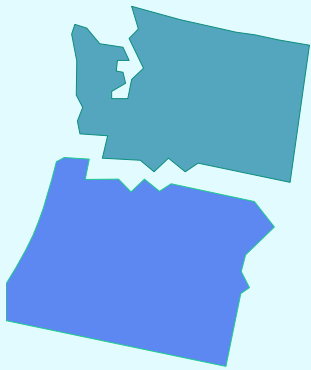
Conclusions: MMT Enrollment

- Continued enrollment in opiate treatment is strongly related to Medicaid status, controlling for client characteristics.
- The relationship holds even in WA where access to methadone is more restricted overall.
- Stable Medicaid coverage is critically important for poor individuals suffering from a chronic condition like opiate addiction.
- However, systemic constraints are also important determinants of continued methadone enrollment.



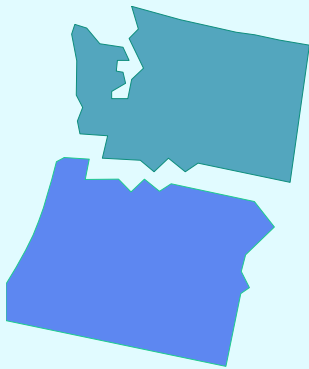
Conclusions: Arrests

- The probability of arrests is dramatically lower while clients are in treatment, controlling for client characteristics.
- The differential in felony arrest rates suggests that there may be cost offsets of treatment.
- Although clinical studies have shown positive impacts of MMT on illegal activity, this is first to do so in a naturalistic setting over two statewide populations (“real outcomes of treatment”).



Limitations

- Arrest data only include felonies and gross misdemeanors. Underestimates the overall level of illegal activity.
- Linked data from databases designed for administrative purposes. However, observed consistent findings in two states and across client types (covariates).
- Propensity score analysis can only adjust for observed covariates and there may be important unmeasured variables.



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