Providing Homelessness Prevention to High-Needs Individuals Using Predictive Analytics

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Outline

- Opportunity & Dilemma of Homelessness Prevention
- The Homelessness Prevention Unit
- Data on Homelessness in Los Angeles
- Predictive Modeling Approach & Performance
- Evaluation via Randomized Controlled Trial
- Current progress & next steps

Opportunity & Dilemma of Homelessness Prevention: The Role of Predictive Analytics

What we know

- Financial help reduces the likelihood of homelessness *(Phillips & Sullivan, 2023)*
- Homelessness is rare outcome, even for very acute households => prevention targeting dilemma *(Shinn, Baumohl, and Hopper, 2001; Evans et al., 2016)*

Opportunities/Questions:

- **How to effectively target prevention programs to those at highest risk?**
  - Traditional approach: individuals in need reach out
- **Alternative: Can predictive analytics inform risk-based targeting?**
- **Evaluation: Is prevention targeted with predictive analytics effective?**

New Program in Los Angeles County

- **County interacts with a large number of low-income individuals**
  - Public health, criminal justice, and welfare systems
  - Collect data on clients, often with information on housing status
- **Pilot in 2019 - CPL's Prediction of new homelessness among county clients**
- **New program in 2021 - Homelessness Prevention Unit (HPU)**
  - Focus on stably housed recent clients of county health & mental health services
  - Range of Services:
    - 4-6 months case management, Flexible cash assistance
    - Referrals to other services benefits (e.g., mental health, work programs)
  - California Policy Lab produces list of high-risk users

Data on 'At Risk' Population and Homelessness

- **Data:** *Infohub* (10 years integrated data from LA County)
  - Department of Health Services (DHS), Department of Mental Health (DMH), Department of Public and Social Services (DPSS), Sheriff's Department, Probation Department, LA Homeless Services Authority (LAHSA), Department of Child and Family Services (DCFS)
- **'At risk' population:** 25+ year old and stably housed (as per DPSS data) and have recently used DHS or DMH services; single and family
- **Measure of homelessness**: any homeless flag (e.g., DPSS, DHS, DMH)
- **Prediction problem: 123,000 clients in "at risk population"; 7% of these experience new entry into homelessness based on county HL flags**

Predictive Model Performs Well

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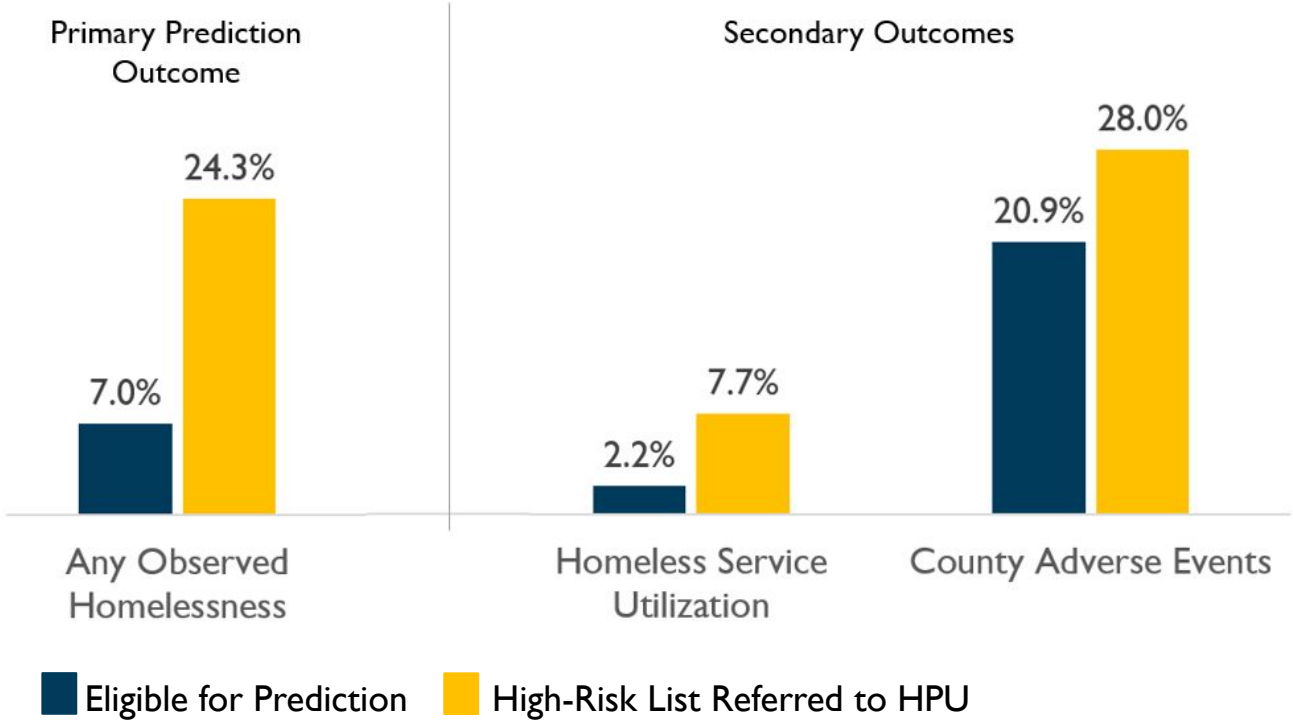
Model uses 580 features in prediction

Range of statistical approaches

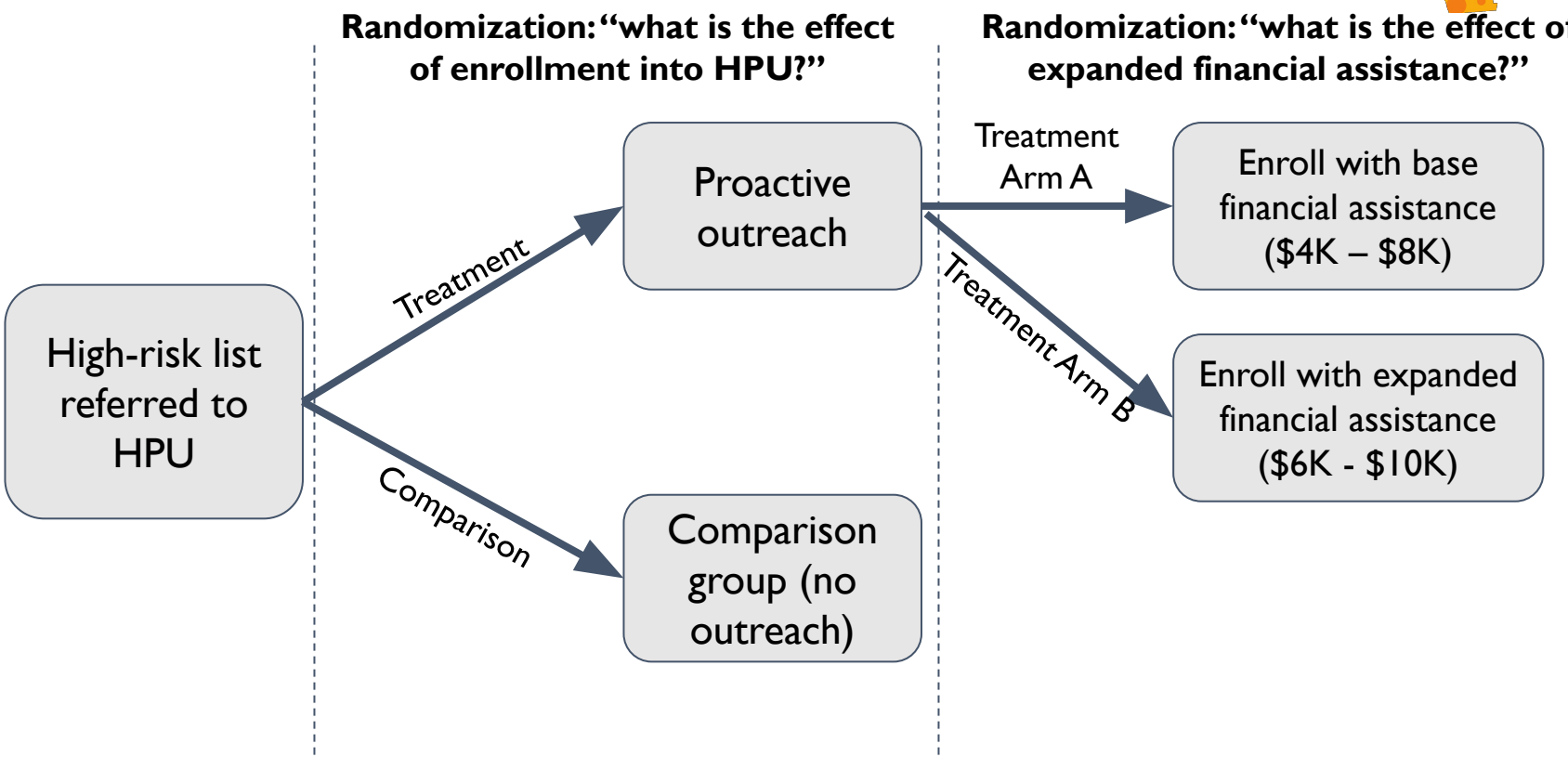
Multiple ways to assess model performance



How does HPU work?

- Step 1: CPL uses prediction modeling to create a de-identified high-risk list
- Step 2: CEO identifies risk list and sends to HPU
- Step 3: HPU Screens risk list using internal systems
  - *Challenge: due to data lags, some individuals on risk list are not housed or cannot be reached*
- Step 4: Randomization takes place
- Step 5: HPU Outreach/enrollment
  - *Challenge: enrollment rate is 20%, reducing number of treated*
- Step 6: HPU Program implementation

Randomized evaluation design



Current Status and Future Outlook

- **Participation in HPU**
  - 1080 enrollments from Feb. 2023 to June 2024 (600 single adults, 480 families)
  - Pre-trial pilot phase: 500+ clients
    - $6,424/participant in financial assistance (rental assistance is largest expenditure)
    - 5 services/participant
    - 2 linkages/participant (mental health, employment)
    - 90% retain permanent housing during program

- **Next Steps**
  - Impact evaluation via randomized-controlled trial
  - Continuous improvement of data and program workflow