Homelessness Research using Integrated Data Systems and Stakeholder Knowledge

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Overview

• Recent and current work around homelessness and services
• Leveraging integrated data systems and stakeholder knowledge for research
• Building resources for Certificate in Data Science for Social Impact

• PC collaborators: Claudia Coulton, Robert Fischer, Nina Lalich, Ashley Hajski, Nicole Coury
• Tech & Human Impact Grant (M. Seikel); Public Interest Technology Grant (New America Foundation); Sisters of Charity Foundation
• Thanks to agency staff for providing insightful feedback: Angela D’Orazio (Sisters of Charity Foundation of Cleveland), Claire Gauntner (Enterprise), Kate Lodge (A Place 4 Me, YWCA of Greater Cleveland), and D’Angela Tanks (FrontLine Service).
Poverty Center’s Integrated Data System

- Birth certificates
- Death certificates
- Blood lead levels
- Early childhood mental health

- Early childhood programs
- Special needs child care
- K-12
- Higher education

- Subsidized child care
- TANF
- SNAP
- Medicaid

- Juvenile court
- County jail

- Homelessness services
- Housing conditions
- Public/subsidized housing
- Residential mobility

- Abuse/neglect screenings and investigations
- Foster care
- Protective services
- Home visiting services
- Food bank pantry usage
Projects on Homelessness and Services

• Research Questions:
  • Are individuals with severe housing instability connected to the social safety net?
  • Do these supports lead to improved housing stability?

• 2013-2017 Cuyahoga County (Cleveland, OH)
  • Dynamic patterns of emergency shelter, SNAP, TANF, public housing subsidies

  • Three groups with patterns of no use, increasing use, and high use of public assistance prior to shelter entry.
  • Increased participation in public assistance programs following the first observed homeless shelter entry reduces subsequent shelter use.

• Targeted, coordinated efforts to increase connection with safety net.
Three distinct groups at shelter entry

Group-based MULTI-trajectory modeling

Modeling of JOINT trajectories of SNAP/TANF and Public housing subsidies

UP TO quarter of first observed shelter use: q1-q5

Static vars to estimate group membership probability:

- Sex, age, racial classification
- Disability at shelter entry
- Domestic violence at shelter entry
- Time in previous place (stability)
- No information on previous stay

G1: no PA  G2: low-increasing PA  G3: high PA
Characterization by bi-trajectory group

**FE regression model finds that SNAP enrollment in a given quarter is negatively associated with shelter use in the following quarter, suggesting that SNAP can prevent extreme housing instability.**
Forward sequences by bi-trajectory group

Quarterly status of public assistance, housing subsidy use, and shelter use (PA, HS, SH): $2^3 = 8$ states

From quarter of first observed shelter use ($q=5$) up until four quarters later ($q=9$).

- Simultaneous PA/shelter use in Groups 3 & 2 (RED) to PA only (GREY). Some return to shelter.
- Shelter use ONLY in Group 1 (MAROON) to no records (BLUE).
- Some transition into PA for Group 1 and minor HS use in all groups (LAVANDER, KHAKI, ORANGE).
Findings + Agency Insights

**Increased participation** in SNAP following homeless shelter entry reduces the likelihood of subsequent shelter use.

- Targeted, coordinated efforts to increase connection with safety net for people facing housing instability.
- Ease access to programs for clients and funding for agencies
- Revise eligibility requirements to avoid benefit cliffs and provide meaningful support for employment and housing stability.
- Seek feedback from navigators working directly with clients.
- Expand access to emergency rental assistance and affordable housing as primary prevention mechanisms against homelessness and a means to advance racial equity in housing stability with benefits for all.
SASS 471: Introduction to Data Analytics for Social Impact, Spring Y2
DSCI 451: Exploratory Data Science, Spring Y2
DSCI 453 Modeling and Prediction, Fall Y2
SASS 4YY DSSI Research Project, Fall Y2

Offered jointly by Jack, Joseph and Morton Mandel School of Applied Social Sciences and Case School of Engineering

- Help shape how technology can be used to advance social justice with a Certificate in Data Science for Social Impact from Case Western Reserve University.

- Learn to use data-driven solutions to improve social welfare, while critically assessing the human impact of these digital technologies from an ethical perspective.

- With our specialized certificate, you’ll be prepared for careers in consulting, philanthropy, journalism, local government, nonprofit management, urban planning and development, and more.
Online platform with resources for DSSI project with the goal of making it publicly available

- Using Administrative/Public Data
- Guide to integrating community knowledge into data science projects.
- Identifying/addressing bias in data analysis – C & P modeling.
- Ethics and fairness considerations
FAIRification of Data - Metadata Findable, Accessible, Interoperable and Reusable

How do clients experience the data intake process?

What drives them into or away from shelter (HMIS)?

How does this knowledge inform our analysis of data?

Framed - Articulate – Interpretable - Reflective
Questions?

Thank you!