

Transit and Treatment: Effectiveness of Transit Systems to Improve Substance Use and Mental Health in Connecticut

*Strategies to Achieve Alignment, Collaboration, and Synergy
Across Delivery and Financing Systems*

Research-In-Progress Webinar
December 14, 2022
12-1pm ET

Welcome: **Julie Ressalam, MPH**
Director, Systems for Action

Presenters: **Jeffrey Cohen, PhD & Carla Rash, PhD**
University of Connecticut

Steven Huleatt, MPH
Capital Region Council of Governments

Q&A: **Julie Ressalam, MPH**



Jeffrey Cohen, PhD

- Economist; UCONN Professor
- Expert in transit and real estate
- Past empirical research includes substance use treatment costs; other public health issues

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Steven Huleatt, MPH

Steven Huleatt currently serves the Capitol Region Council of Governments (CRCOG) as the Public Health Emergency Preparedness (PHEP) Grant Manager and as the Metropolitan Medical Response System (MMRS) Project Manager in Hartford, CT. He is also an Adjunct Instructor in the University of Connecticut's Department of Public Health Sciences. Prior to joining the CRCOG, Mr. Huleatt was a local public health director for 25 years.

- Other Key Team Members:
 - Carla Rash (UCONN Health)
 - Shane Murphy (UCONN)
- Access to substance use disorder (SUD) and mental health (MH) treatment
 - Is a costly problem in the US
 - Drives health disparities, and
 - Has been exacerbated by the opioid crisis.
- Aside: An example from a sample of 1198 patients initiating SUD treatment in CT/Western MA
 - 54% did not have a driver's license
 - Of the 553 with a license, 39% had no access to a vehicle

- Motivation: Strong transit systems can improve treatment outcomes and impact clinic operating costs.
- Past studies: evidence of decreasing unit costs with more patients, but wide variation. (Duffy *et al.*, 2004; Beaston-Blaakman *et al.*, 2007; Dunlap, 2008)
 - Unknown why this variation occurs.
 - Results in difficult decision making on the part of state agencies.
- Treatment facilities' proximity to transit may:
 - Increase patient volumes
 - Reduce unbillable clinician time (missed appointments)
 - Pushing down unit cost curves (economies of scale)
 - If integrated (MH and SUD services), may also produce cost savings (economies of scope)

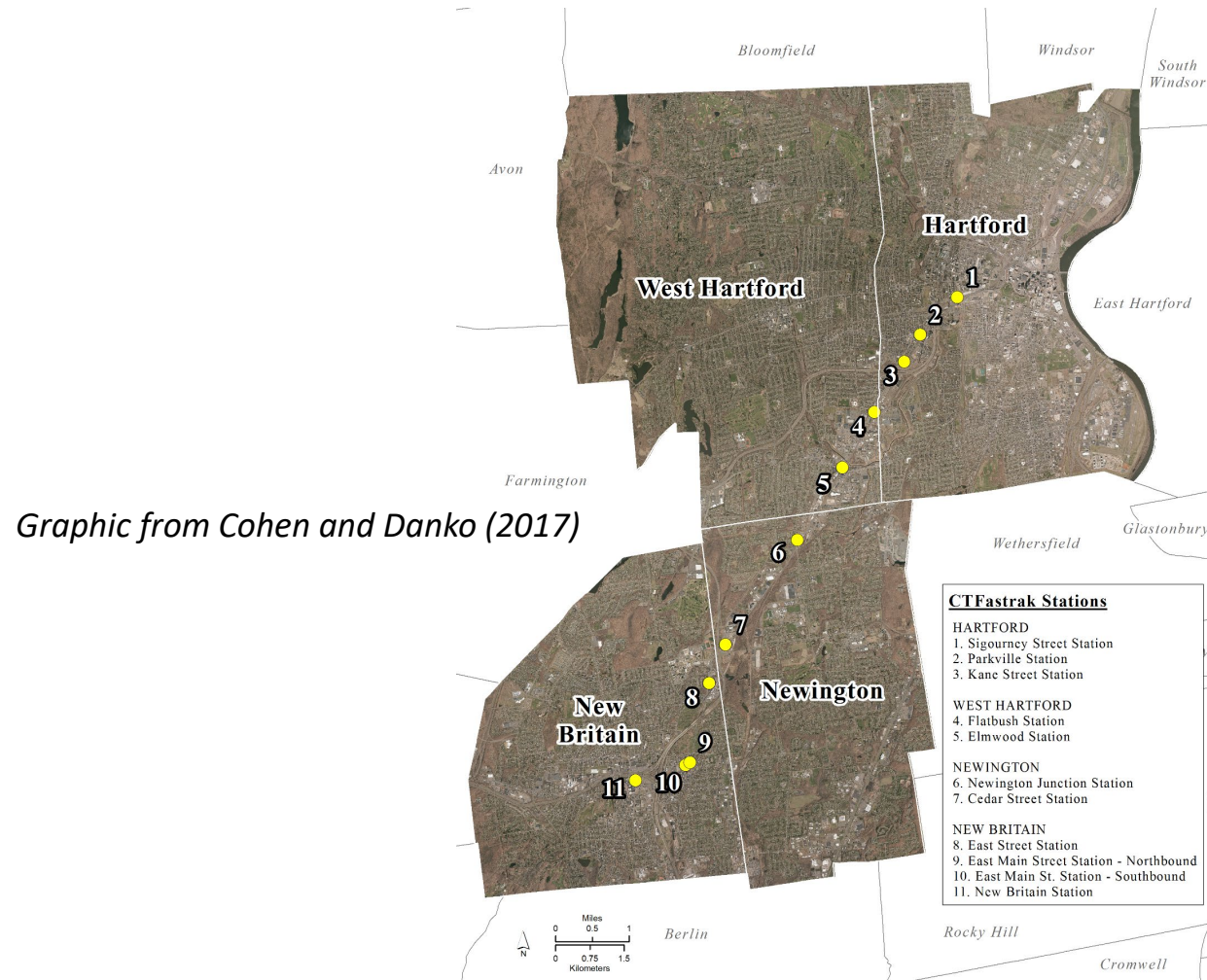
- Can System Alignment Improve Treatment Outcomes & Equity?
 - Transit System (social services)
 - Substance Use Treatment Providers (medical services)
 - Prevention (public health)
- Approach: First explore how connected systems that are already in place may have impacted outcomes, costs, equity
- Use these findings to rationalize further system alignment

- Using a quasi-experimental empirical approach:
 1. How treatment costs differ, after vs. before a new transit line, for providers near vs. far from transit.
 2. How transit impacts provider costs who offer SUD or MH in isolation versus integrated care.
 3. For transit improvements, how is the reduction in treatment costs from treating patients with better treatment outcomes different, for clients treated at providers close to these enhanced social services, and after social services improvements? And how is this related to client demographics (i.e., equity)?
 4. Implications for System Alignment?

- Provider level
 - State substance use agency (provider locations, average demographics of clients)
 - IRS tax forms data (expenditures)
- Program level
 - State substance use agency (program locations, client counts, treatment outcomes; mental health vs. substance use treatment or both)
- Population level
 - *CTfastrak* Station Access
 - Distances from programs to stations
- Primary area of focus: Central Connecticut

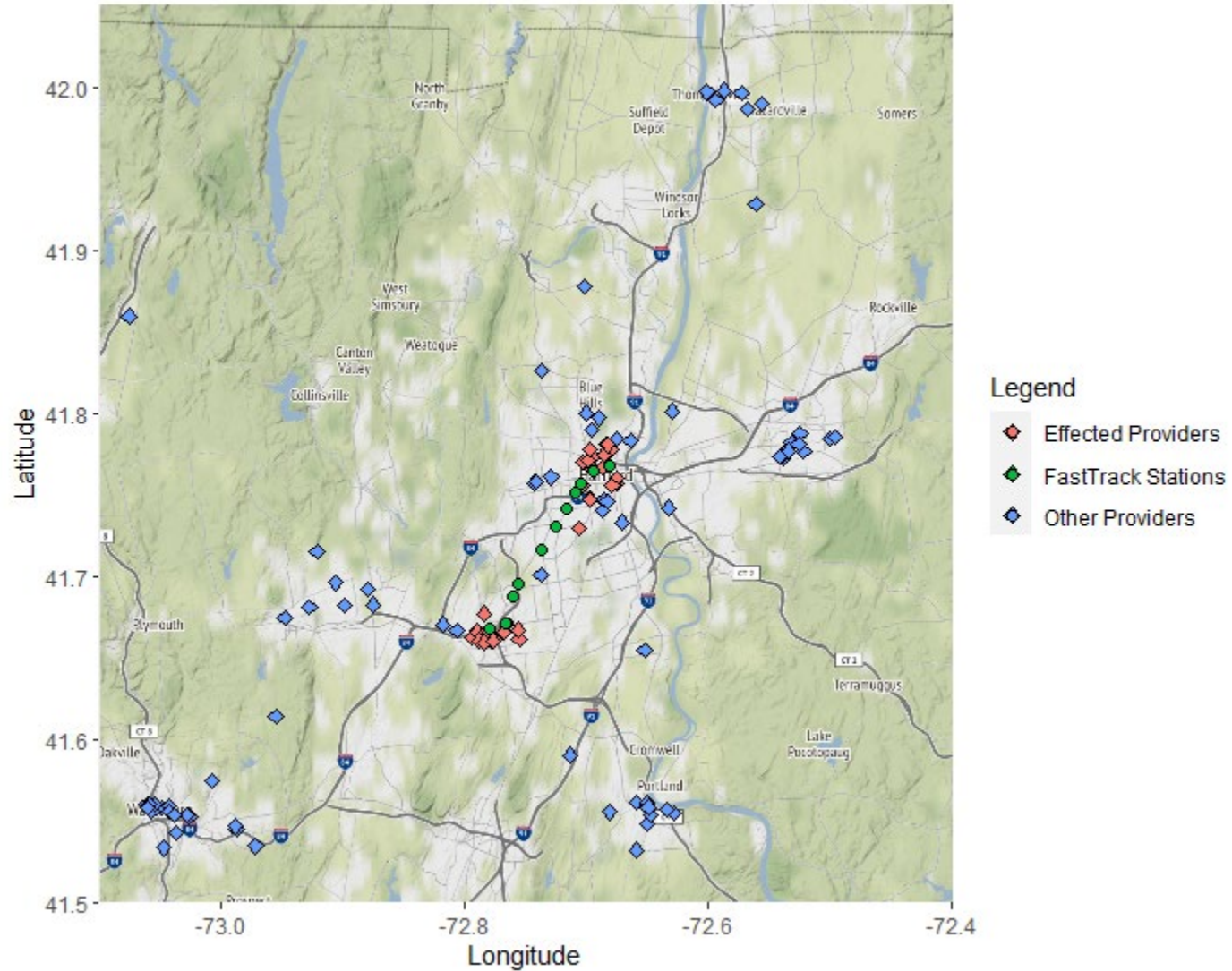
- Our data includes 32,000-39,000 client interactions per year
- 50 providers, 8 years (annual, 2012-2019), 1,075 program-years (unbalanced panel)
- About 17% are within one mile of *CTfastrak*
- About 6% are within ½ mile of a CTfastrak station
- Data includes 20 different program types – we focus primarily on outpatient SUD treatment
- Average provider had annual operating costs of \$39.7 million
- On average, 18% of clients are Black, 16% Hispanic, 45% female
- Analysis focuses on after versus before 2015 *CTFastrak* rapid transit station openings in Hartford County, CT, for programs that are near versus far from a station

Research Methods: New Transit



CTfastrak (bus rapid transit): Opened March 2015

Research Methods: New Transit



Red dots: programs within 1/2 mile of a CTfastrak Station

- Triple Difference in Differences
- Enables researchers to identify causal relationships

$$\ln(OpCost_{it}) = \beta_0 + \beta_1 \ln(NClients_{it}) + \beta_3 \ln(NClients_{it}) \times Distance_i + \beta_4 \ln(NClients_{it}) \times Year_i + \beta_5 \ln(NClients) \times Distance_i \times Year_i + \beta_6 Z + \epsilon_{it}$$

- Without considering CTfastrak, for every 10% increase in Hispanic patients, Total Operating Costs were lower by 1.96%, after controlling for other demographics, programs, and the programs' client volumes - Why?
 - Caveat: This particular relationship is a correlation, not causality
 - Too little time variation in demographics to identify causal relationship between race/ethnicity and costs
- Causality: Overall, spending significantly decreased at facilities close to new stations
 - And did not change at facilities not close to new stations
- Causality: Further, **incremental** spending significantly decreased with more clients at facilities close to stations (economies of scale)
 - For 10% more clients, incremental spending fell by 0.15% on average

- Causality: Incremental spending significantly decreased with more treatment completions (i.e., outcome) at facilities close to stations (for providers with 10% higher completion rate, average costs 1.18% less)
- Causality: Higher levels of other outcomes (reduced use; employment; arrested; self-help; social supports) seem to have no significant effect on incremental spending
- Causality: Providers with programs near CTfastrak after the opening, treating both mental health and addictions, had 10% lower costs than other providers (economies of scope)

- System Alignment and Advisory Panel:
 - What do the answers to the previous questions imply for system alignment?
 - Aligning systems so that transit is “close” to “treatment” can lead to more clients and lower average costs
 - Aligning systems so that transit is “close” to “treatment” can lead to better outcomes costing less
 - Alignment can enhance treatment access, which is an equity issue for clients in urban areas who do not have automobiles

- Other Aspects to the Project:
 - Alignment takes coordination among decision-makers
 - Monthly panel meetings since 2020: CT DMHAS, CT DPH, CT DOT, CRCOG, several treatment providers, UCONN, UCONN Health;
 - Steven Huleatt (CRCOG) – Advisory Panel Coordinator
 - Journal manuscript invited to special issue of HSR (co-authors are a subset of this panel’s members)
 - NIH ComPASS funding – CT DMHAS submitted LOI to expand upon this agenda to affordable housing and transportation

Steven Huleatt, MPH

Thank you!

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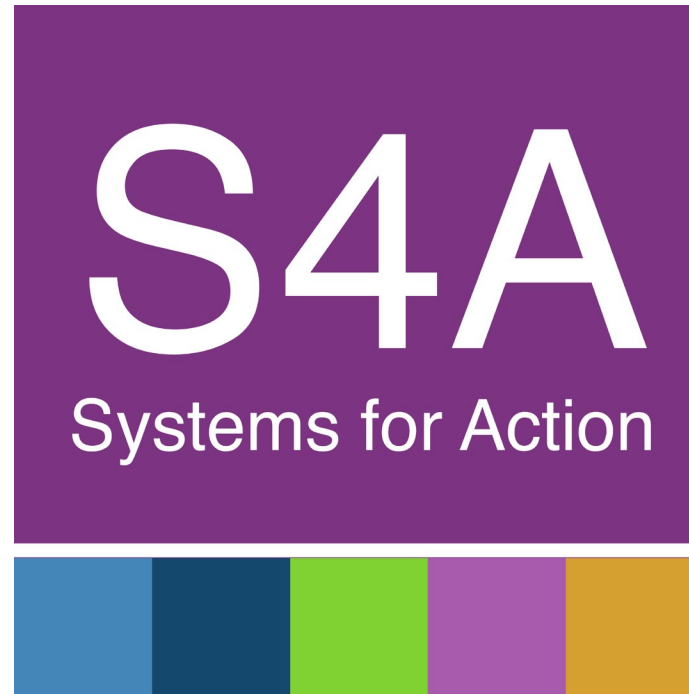
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Questions?



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Georgia State University

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