

**Improving Service Delivery for the Homeless with Analytics and
Process Modeling: Community Engagement and Capacity Building**

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Monica J Garfield, Bentley University

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Principal Research Investigators

**Monica J Garfield,
Bentley University**

**Sandeep Puroo,
Bentley University**

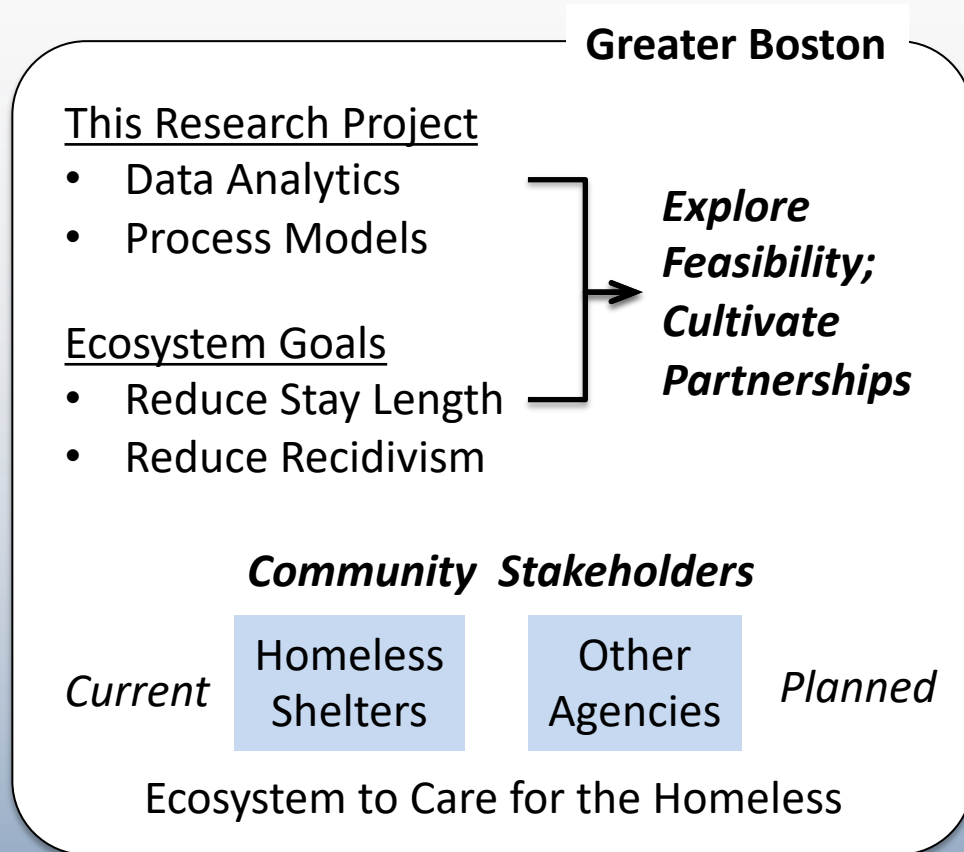
Community Partners

**Deborah Putnam,
Director of Strategic Initiatives,
Pine Street Inn**

**Lyndia Downe,
President and Executive Director,
Pine Street Inn**

Project Overview

Visual Schematic



Project Vision

Vision for Future IRG Project

1. Develop Novel Perspectives such as Escalation Theory and Explore its Application to the Homelessness Puzzle
2. Refine Data Analytics and Process Models to Improve Matching of Services to Individuals
3. Conduct Pilot Implementations and Evaluation with Partners

Current Project

- Cultivate Community Partnerships
 - Explore Technical Feasibility
- An upward-pointing arrow is located between the 'Current Project' box and the 'Vision for Future IRG Project' box, indicating that the current project's activities are intended to lead to the future vision.

Project Overview

Use-Inspired Research

- **Community Stakeholder Objectives**
 - Reduce recidivism and long term homelessness
- **Aspirations of Individuals facing Homelessness**
 - Unique needs and challenges
- **Research Intent**
 - Approaches to select/deliver services in response to the aspirations of the individuals, and the goals of the community partners
- **Research Activities**
 - Data analytics to predict the best course of action for a person experiencing homeless
 - Improving processes to improve efficiency and effectiveness during the intake process

PG Activities

- **Focus groups conducted with community stakeholders + Data obtained from the City of Boston and community stakeholders**
- **Initial predictive models developed to explore long-term homelessness + Process models developed for guest intake process**
- **Adding to community partner network and with more ecosystem partners + Solving data quality issues and applying data cleansing + Developing tools for applying predictive models in practice**
- **Planned – Collect observational data at community partners + Analyze data from focus groups + Refine process models for in collaboration with community partners**

Project Update

Data Analytics – Predictive Models

Jay presents himself at the shelter. Jay happens to be Black/African American, 60 years old, has a disability, reports having an income, and reports no substance abuse.

Assessing the probability that a guest will slide into long-term homelessness

Factors to consider	Enter Data			
Age	60	Number		
Race - Black	1	Yes/No	Choices	
Veteran Status	0	Yes/No	Yes	1
Disability Status	1	Yes/No	No	0
Disability Type - Substance Abuse	0	Yes/No		
Income	1	Yes/No		
Log Odds	-0.280157			
Computed initial probability	43.03%			

Anticipatory identification of at-risk individuals, those with a greater propensity to slide into **Long-Term** homelessness.

Coefficients:

	Estimate
(Intercept)	-3.298134
BlackAfricanAmerican	0.385994
VeteranStatus	-0.512541
age	0.028818
Disable	0.569002
DisType10	0.055994
income1	0.333501

Focus Groups

“One of the issues is systems coordination.”

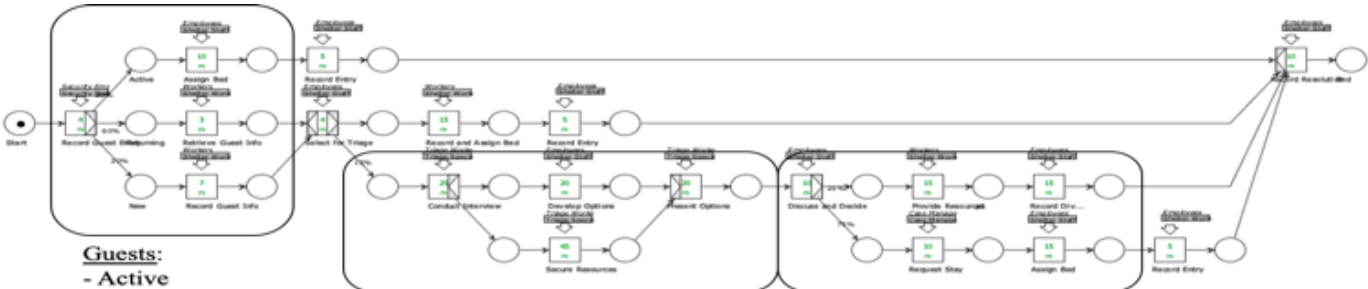
“I wish I had better data”

“ You know, the schools, the health care system, the homeless system, the coordination is not what it needs to be”

“there are two worlds. There's like, who is eligible for what, ...and then there's the HMS world, which we're trying to connect to, you know, program evaluation.”

“the state has one lens, and then cities have another lens, and then the Executive Office of Health and Human Services, and Massachusetts has another lens.”

Work Process at Shelters: Guest Intake



Guests:
- Active
- Returning
- New

Triage:
~15% selected for Triage

Diversion:
~25% of those accept alternative solutions and leave

Project Evolution

Lessons Learned:

- Terminology derived from empirical investigations and prior policy efforts (e.g. chronic homelessness) not adequate for proactive approaches.
- Policies and Programs often an afterthought; not well measured in the data sets; funding priorities impacts data collection and can introduce bias
- Problems not only about using available data but also collecting it more effectively and injecting insights from data to make more better real time decisions

Actions Attempted:

- Develop and operationalize terminology with malleable time windows to gain faster assessment of an individual's journey through homelessness
- Develop and demonstrate models for predicting slide to long-term homelessness, towards better matching of service delivery against individual needs.