PREDICTING IMMINENT HOMELESSNESS AMONG EMERGENCY DEPARTMENT PATIENTS WITH UNHEALTHY ALCOHOL OR DRUG USE

Kelly M. Doran, Eileen Johns, Marybeth Shinn, Maryanne Schretzman, Donna Shelley, Ryan P. McCormack, Lillian Gelberg, John Rotrosen, Tod Mijanovich
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Background

Shared root causes and contributors

Homelessness

Shared Consequences

Substance Use
Background

Prevention

Homelessness prevention = key national strategy
Methods Overview

• STEP 1: ED patient survey

• STEP 2: Link with New York City Department of Homeless Services shelter data

• STEP 3: Predictive modeling for future shelter entry & develop homelessness risk screening tool
Step 1: ED Patient Survey

NYC ED – random sample

Adults (≥ 18 years)
  English & Spanish speakers, NYC residents, able to provide informed consent
  Excludes medically or psychiatrically unstable, intoxicated, prisoners

Provide informed consent, $15 incentive
Survey Questions

- Demographics
- Physical & mental health
- Alcohol & drug use
- Health services use
- Socioeconomic status
- Homelessness history
- Housing details
- Social support
- Criminal justice history
- Food insecurity
- Other social service needs
- Identifying information
Step 2: Link Data

• Survey linked with CARES database – captures 90% of shelter use in NYC

• Linkage performed by NYC Center for Innovation through Data Intelligence
Step 3: Prediction

- Examine what factors from survey predict homeless shelter entry in next 6 months

- Full universe of variables from survey included in analysis as candidate predictors – results of multiple modeling types compared

- Variables consistently important in models considered as candidate variables for homelessness risk screening tool
Step 3: Prediction

- Goal was to create a screening tool that would be practical to implement in ED
  - Short
  - Yes/no patient questions
  - No complicated scoring

- Examined sensitivity and PPV of combinations of candidate variables meeting criteria above
  - Prioritized sensitivity over specificity
Results

- Data collected Nov 2016 – Jan 2018
- 82% of eligible patients participated
- 2,837 unique participants
  - 2,521 not already (currently) homeless
    - 1,262 unhealthy alcohol or drug use
    - 1,255 no unhealthy alcohol or drug use
Of emergency department patients with unhealthy alcohol or drug use who were not currently homeless, 8.5% entered a NYC homeless shelter within the next 6 months.
Results

▪ Survey asked patients “how likely are you to enter a homeless shelter in the next 6 months?”
  ▪ If answered “very” or “somewhat” likely → 53.3% sensitivity & 26.5% PPV for actual shelter entry
  ▪ If answered “very” likely → 32.5% sensitivity & 31.5% PPV for actual shelter entry
Results

- Discussion with stakeholders about pros and cons of various screening tool possibilities
- 3-item screening tool: shelter use (past 12 mo.), applied for shelter (past 3 mo.), jail / incarceration history (lifetime)
  - 85.0% sensitivity
  - 19.1% PPV
Discussion & Next Steps

- A substantial percentage of ED patients with unhealthy alcohol or drug use who are not already homeless become homeless in the next 6 months.

- Important to consider for ED-based substance use interventions.

- Current pilot study of an intervention.
THANK YOU