Stimulant use, housing instability, and depressive symptoms: Comorbid conditions and viral trajectories in the context of coordinated HIV care in Los Angeles County

Michael J. Li, Erica Su, Wendy Garland, Sona Oksuzyan, Sung-Jae Lee, Uyen H. Kao, Robert E. Weiss, Steve Shoptaw

1 Center for HIV Identification Prevention and Treatment Services, University of California, Los Angeles
2 Center for Behavioral and Addiction Medicine, Department of Family Medicine, David Geffen School of Medicine, University of California, Los Angeles
3 Department of Biostatistics, Fielding School of Public Health, University of California, Los Angeles
4 Division of HIV and STD Programs, Los Angeles County Department of Public Health
5 Department of Psychiatry and Biobehavioral Sciences, David Geffen School of Medicine, University of California, Los Angeles
Medical Care Coordination (MCC)

• In 2013, LAC Division of HIV and STD Program (DHSP) developed the MCC Program to provide coordinated medical and psychosocial services of people living with HIV (PLWH)

• Targets PLWH with the greatest challenges managing HIV and other comorbidities.

• Coordinated case management services include:
  • Comprehensive assessments of service needs
  • Brief interventions targeting ARV adherence, engagement in HIV care, and sexual health.
  • Linkage of support services for housing, mental health, and substance use
Objectives

• To assess MCC patients’ trajectories of VS from 12-months prior to MCC enrollment to 36 months following MCC enrollment

• And to assess whether these trajectories differed by stimulant use, housing instability, and depressive symptom severity as reported by participants at MCC enrollment
Study Design

• Longitudinal analysis of 130,460 observations on 6,408 participants in the LAC Medical Care Coordination (MCC) program
  • 2 months prior to MCC enrollment through 36 months post-MCC enrollment

• Participants were eligible for MCC if they:
  1) were newly diagnosed with HIV in the past 6 months;
  2) had not seen an HIV medical provider in 7 months or more;
  3) lacked access to antiretroviral therapy (ART) despite meeting current clinical guidelines for treatment;
  4) were on ARV but did not have suppressed viral load (>200 copies/mL);
  5) or were recently diagnosed with an STI in the past 6 months
Study variables

- **Dependent variable:**
  - Viral suppression (< 200 c/mL)

- **Main independent variables:**
  - Stimulant use (past 6 mo.)
  - Housing instability (past 6 mo.)
  - PHQ-9 (past 2 wk.)
  - Time

- **Other covariates:**
  - Gender
  - Race
  - Income
  - Education
  - Born outside U.S.
  - Time since HIV diagnosis
  - Incarceration (past 6 mo.)
  - Experience violence
  - STI
  - Cannabis use
Analysis

• Analyses were generalized linear mixed models fit in Stata 15 using the mixed command (StataCorp, 2017). We fit mixed effects logistic regressions with a random intercept to estimate the trajectory of VS over time with MCC enrollment set as the zero points and time continuous.

• The time trend was modeled as a piecewise linear trend from 12 months before MCC enrollment to 36 months after enrollment with slope change points at enrollment and at 6 months post-enrollment.
Participant characteristics at enrollment

- 57.3% were virally unsuppressed (≥ 200 c/mL)
- Mean age of 40.5 years
- 84% male
- 48% Latino/a, 28% Black
- 24% reported housing instability (past 6 months)
- 29% had a PHQ-9 score >10
- 20% reported methamphetamine use (past 6 months)
- 8% reported cocaine/crack use (past 6 months)
On average, participants increased in probability of VS by 0.42 within the first 6 months of MCC.
Trajectories of viral suppression: First 6 months in MCC

Compared to those with no comorbidities, those with any or all comorbidities had significantly lower probabilities of VS by 6 months post-enrollment.
Trajectories of viral suppression: 6-36 months post-enrollment

Those with high PHQ-9 scores and all comorbid conditions continued to improve 6-36 months post-enrollment.
Trajectories of viral suppression: 6-36 months post-enrollment

Those who only reported stimulant use and those who only reported housing instability did not significantly increase in probability of VS 6-36 months post-enrollment.
Discussion

• Across all groups, most improvement occurred within the first 6 months following MCC enrollment.

• By 36 months after MCC enrollment, those who reported stimulant use and those who reported unstable housing:
  • did not significantly improve after 6 months
  • and were less likely than those with no comorbidities to achieve viral suppression.

• Interestingly, those with depressive symptoms were as likely to achieve viral suppression as those with no comorbidities by 36 months after MCC enrollment.
Discussion

• **Data suggest that:**
  • MCC significantly improved VS among all patients groups.
  • However, it took longer among those with all comorbidities to achieve VS than patients with no comorbidities.
  • These improvements in VS sustained for the 36 months following enrollment.

• Improving and strengthening programs for PLWH who have complex comorbidities is critical to reaching local and national HIV strategy targets.
Discussion

• Next research questions:
  
  • Do people with comorbid conditions improve in those conditions during and after MCC participation?
    • Which comorbid conditions show the greatest improvement?
  
  • What additional program components are needed to improve comorbid conditions, retention, and in turn viral suppression?
Questions?