VIROLOGY FASTTRACK

Evidence-Based Structural Intervention
Evidence-Based for Retention in HIV Care

INTERVENTION DESCRIPTION

Goal of Intervention
- Improve retention in HIV care and other HIV-related health outcomes (including change in CD4 cell count)

Target Population
- HIV care providers and their HIV clinic patients

Brief Description

Virology FastTrack is a clinical decision support system that generates alerts in the electronic medical record (EMR) to notify HIV care providers of suboptimal follow up, virologic failure, and new laboratory toxicities. The alerts are generated based on an algorithm that accounts for the patient's appointment and care history. FastTrack generates and sends alert messages to providers through their EMR home page, patient-specific EMR, and biweekly emails. The interactive alerts for virologic failure, suboptimal follow up, or laboratory toxicity provide key clinical information and a streamlined mechanism for providers to request follow-up appointments and lab tests. Providers respond to these alerts by acting, dismissing, or redirecting the alert to a different provider. Scheduling requests are electronically sent to administrative assistants who contact and schedule patients for follow-up lab tests and/or appointments. Alerts are automatically resolved and removed from the EMR when patients complete repeat lab tests, have an arrived appointment, or if the provider did not respond in 8 weeks. If a requested appointment or lab test is not completed within 2 weeks of the requested timeframe, a one-time reminder alert is sent to the HIV care provider.

Intervention Duration
- Ongoing

Intervention Setting
- HIV clinic

Deliverer
- Clinical decision support system

Structural Mechanism of Change
- Capacity Building – technology
  - Implementation of the clinical decision support system in the hospital HIV clinic that generates alerts in the electronic medical record to notify providers about patient outcomes

INTERVENTION PACKAGE INFORMATION

For intervention materials, please contact Gregory K. Robbins, Massachusetts General Hospital, 55 Fruit Street, Cox 5, Boston, MA 02114.

Email: grobbins@partners.org for details on intervention materials.

EVALUATION STUDY AND RESULTS

Study Location Information
The original evaluation was conducted at the Massachusetts General Hospital HIV clinic in Boston, MA between 2007 and 2008.

Study Sample
Thirty-three HIV care providers followed 1,011 HIV patients. The baseline study sample of HIV patients (N = 1,011) is characterized by the following:

- *54% white, 22% black or African American, 12% Hispanic/Latino, 12% other*
- *72% male, 28% female*
- *48% men who have sex with men, 27% heterosexual, 14% injection drug use, 3% blood transmission, 8% unknown (HIV transmission category)*
- *75% participants >40 years old*
- *72% participants with undetectable viral load (<400 copies/mL)*

Recruitment Settings
HIV clinic

Eligibility Criteria
Men and women were eligible if they were HIV infected, had a participating provider, and had a completed appointment within the past 6 months or a completed appointment during the following year.

Comparison
Providers of patients assigned to the comparison group received "static" alerts which were only visible on patient-specific EMR and provided no additional information or semi-automated scheduling mechanism.

Assignment Method
Participants (N = 1,011) were randomly assigned with a 1:1 ratio, by blocks of 4, stratified by provider to one of two groups: Virology FastTrack (n = 506) or control (n = 505).

Relevant Outcomes Measured

- Retention in HIV care was defined as sub-optimal follow-up measured as having no arrived appointments for >6 months during a 12-month post initiation of the Virology FastTrack intervention.
- Change in CD4 cell count was measured for patients with and without virologic failure (0.063 and 0.035 x 10^9 cells/L per month) from 4 months before the study start date to 3 months after the study end date.[‡]

Significant Findings on Relevant Outcomes

- Over the 12-month assessment period, patients of providers in the intervention group had a lower rate of 6-month sub-optimal follow-up than patients of providers in the comparison group (20.6 vs. 30.1 events per 100 patient-years, p = 0.022).
- Among 982 patients with at least 1 CD4 cell count measure, patients of providers in the intervention group had a significantly greater increase in mean CD4 cell count than patients of providers in the comparison group over the 12 month assessment period (0.0053 x 10^9 cells/L per month vs. 0.0032 x 10^9 cells/L per month; difference, 0.0021 x 10^9 cells/L per month; 95% CI 0.0001 to 0.004; p = 0.040). ‡

Considerations

- Patients of providers in the intervention group had a significantly shorter median time to next scheduled appointment after suboptimal follow-up than comparison participants (1.71 vs. 3.48 months, p < 0.001).
- There were no differences in the rate of virologic failure (p = 0.154).

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‡Outcome is only relevant to the Structural Interventions Chapter

REFERENCES AND CONTACT INFORMATION

Robbins, G. K., Lester, W., Johnson, K. L., Chang, Y., Estey, G., Surrao, D., . . . Freedberg, K. A. (2012). Efficacy of a clinical decision-support system in an HIV practice: A randomized trial. *Annals of Internal Medicine, 157,* 757-766.

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