VIROLOGY FASTTRACK

Center for Innovation and Engagement

Intervention Fact Sheet*

Priority Population:	Intervention Type:	Setting:	Results:	Priority Level:
PWH	Tech-Based Service Delivery	Care Clinic	↑ CD4 Count by 40%	High

This intervention is considered high priority because it is thought to be compatible with trends in health care (e.g., adoption of EMR's and Clinical Decision Support System) but specifically with attention to provider behavior. Staff reported high satisfaction with the intervention, and it does not seem to require active participation of people living with HIV. The intervention can be transferable to other settings that use electronic record systems (although this may require informatics support for some features). Clinical Decision Support System (CDSS) tools are designed to minimize redundancy and alert fatigue which help with intervention sustainability. The CDSS can also be modified for other chronic health conditions, such as viral hepatitis, heart failure, and diabetes.

INTERVENTION DESCRIPTION

Manuscript Title: Efficacy of a Clinical Decision-Support System in an HIV practice: A Randomized Trial (*Article found under title:* Successful Outcomes of a Clinical Decision Support System in an HIV Practice: A Randomized Controlled Trial)

Focus: Retention

Category: Technology-based

Location(s): Boston, MA

Population(s) Focus: General population

Intervention Setting: Other HIV care clinic

Intervention Site(s): Massachusetts General Hospital HIV Clinic

Staff Delivering the Intervention: Clinical Decision Support System (CDSS) and medical service providers

Intervention Duration: 1 year

Study Time Period: September 18, 2007–September 17, 2008

*The manuscript for this intervention can be accessed at ncbi.nlm.nih.gov/pmc/articles/PMC3829692/.

Brief Description of Intervention: The Virology FastTrack intervention is a Clinical Decision Support System (CDSS) that generates alerts in the electronic medical records to notify HIV outpatient providers of adverse events. The system consists of three types of alerts: 1) suboptimal follow-up; 2) virologic failure; and 3) laboratory toxicity.

Suboptimal follow-up alerts were generated using three rules: a missed appointment and no subsequent arrived appointment within 7 days; no arrived appointment in the previous 4 months and no scheduled appointment in the next 2 months; and a missed appointment in the previous year, no arrived appointment in the previous month and no scheduled appointment in the next 2 months. Virologic failure alerts were generated for HIV RNA > 400 copies/mL where the previous measurement was ≤ 400 copies/mL.

Interactive alerts could be viewed on providers' EMR "home pages" as well as biweekly emails. The interactive alerts contained hyperlinks that allowed providers to access prior laboratory results, appointment history and prior alerts. After reviewing data provided by an interactive alert, providers could: 1) act; 2) dismiss; or 3) redirect the alert to a different provider. A one-time repeat interactive alert was generated if the requested action did not occur within two weeks of the specified timeframe. Alerts were automatically resolved based on repeat laboratory tests or an arrived appointment with a clinic provider for suboptimal follow-up. Intervention alerts were removed from the EMR after the provider responded to the alert or after 8 weeks ("timed out"). Control alerts were only removed from the EMR after resolution.

The intervention was quickly adopted by providers due to reported ease of use and time-efficiency (90% of interactive alerts were acknowledged). Most providers (96%) and all administrative assistants reported that the Virology FastTrack improved patient care and recommended that the intervention be incorporated into routine clinical care.

EVALUATION STUDY AND RESULTS

Research Design: Randomized controlled trial

Eligibility Criteria: Patients with HIV of participating providers at the HIV clinic, with an active case status and an arrived appointment within 6 months of the study start date (9/18/2007) or an arrived appointment during the following year.

Comparison: 506 intervention patients were compared to 505 control patients that triggered "static alerts" which were only visible on patient-specific EMR pages and did not provide additional information or semi-automated scheduling mechanisms.

Relevant Outcomes: Retention in care was defined as having no arrived appointment (suboptimal follow-up) for more than 6 months during a 12-month period after intervention initiation.

Significant Positive Findings on Relevant Outcomes: The rate of 6-month suboptimal follow-up was significantly lower for patients in the intervention group than those in the comparison group (20.6 vs. 30.1 events per 100 patient-years, p = 0.022). The intervention also increased CD4 count by 40% (63.6 vs. 38.4 cells/mm^3/year).

Strengths and Other Significant Clinical Outcomes:

- Median time-to-next scheduled appointment was shorter in the intervention arm after a suboptimal follow-up alert (1.71 versus 3.48 months; p < 0.001).
- For the intervention arm, the increase in mean CD4 count during the 12-month assessment period was greater than for those in the comparison group (5.3 versus 3.2 cells/mm^3/month; difference = 2.0, 95% CI [0.1, 4.0], p = 0.040).

Other Considerations/Limitations:

- The intervention was only tested in one hospital with a strong, existing informatics infrastructure.
- Provider randomization may have introduced crossover bias as they may have closely monitored patient results.
- A single provider was alerted for each event, resulting in not utilizing clinical teams (e.g., case managers, social workers, and pharmacists).

REFERENCE

Robbins GK, Lester W, Johnson KL, et al. Efficacy of a Clinical Decision-Support System in an HIV Practice. *Annals of Internal Medicine.* 2012;157(11):757. doi:10.7326/0003-4819-157-11-201212040-00003.