

ELECTRONIC MEDICAL RECORDS (EMR) ALERTS

Evidence-Informed Structural Intervention

INTERVENTION DESCRIPTION

Goals of Intervention

- Increase HIV and Hepatitis C* (HCV) screening

Intended Population

- Adults aged 18-64 years for HIV screening and adults born between 1945 and 1965 for HCV screening*

Brief Description

Electronic Medical Records (EMR) Alerts prompt providers to screen patients who meet eligibility criteria for HIV and/or HCV testing. When providers see the alert, they are encouraged to notify the patient of the screening test using opt-out language. If the patient agrees, a test is ordered, and the results are documented in the EMR thereby satisfying the alert. If the patient refuses, the alert remains active in their health maintenance module until satisfied.

Theoretical Basis

- None reported

Intervention Duration

- Ongoing

Deliverer(s)

- Non-person (EMR alert system)

Intervention Settings

- Primary care clinics

Delivery Methods

- EMR alert

Structural Components

- Access – HIV medical care
 - Increased access to HIV testing
 - Linked eligible patients to health care
- Capacity Building – Provider/Supervisor training
 - Provider educational program
- Capacity Building – Technology
 - Electronic medical record alert
- Policy/Procedure – Institutional policy/procedure
 - Provided a streamlined referral process to specialty care

*CDC guidelines for HCV testing have been updated and are available here:

[Testing Recommendations for Hepatitis C Virus Infection | CDC;](https://www.cdc.gov/hepatitis/hcv/guidelinesc.htm)
<https://www.cdc.gov/hepatitis/hcv/guidelinesc.htm>

INTERVENTION PACKAGE INFORMATION

An intervention package is not available at this time. Please contact **Hazel Tapp**, Vice Chair for Research, Department of Family Medicine, Atrium Health, Charlotte, North Carolina.

Email: hazel.tapp@atriumhealth.org for details on intervention materials.

EVALUATION STUDY AND RESULTS

Study Location Information

The original evaluation study was conducted in primary care practices in and around the metropolitan area of Charlotte, North Carolina.

Key Intervention Effects

- Increased HIV screening

Study Sample

The post-alert sample of 109,173 persons who were eligible for HIV screening consisted of:

- 58% Black or African American persons
- 25% White persons
- 1% Asian persons
- 16% Persons identifying as other race/ethnicity or did not report race/ethnicity
- 61% female persons
- 39% male persons
- Mean age: 44 years

Recruitment Settings

- 12 Atrium Health primary care practices

Eligibility Criteria

Adult patients aged 18–64 years, who met the eligibility criteria for a once in a lifetime HIV screening, and no prior HIV diagnosis or test documented in the EMR.

Comparison

This is a pre/post study design. Data were grouped into two time periods: 1) the 12-month period preceding alert activation (October 2016 – September 2017); and 2) the 12-month period after alert activation (October 2017 – September 2018).

Relevant Outcomes Measured

- HIV screening was defined as a documented HIV test result in the EMR.

Participant Retention

Retention was not reported. The PRS Project does not evaluate participant retention for the Linkage to, Retention, and Re-engagement in HIV Care chapter.

Significant Findings on Relevant Outcomes

- HIV screening among eligible persons increased from 6.2% in the pre-alert period compared to 11.3% in the post-alert period, a 5.1% absolute increase ($p < 0.001$).
 - HIV screening rates for Black or African American persons increased from 13.7% to 20.9% ($p < 0.001$).
 - HIV screening rates for White persons increased from 2.8% to 7.3% ($p < 0.001$).
 - HIV screening rates increased for female persons from 6.3% to 12.5% and for male persons from 6.1% to 10.6% ($p < 0.001$).

Strengths

- None identified

Considerations

Additional significant positive findings on non-relevant outcomes

- HCV screening rates for eligible persons increased from 3.2% in the pre-alert period to 22.7% in the post-alert period, ($p < 0.001$), a 19.5% absolute increase.

Non-significant findings on relevant outcomes

- None reported

Negative findings

- None reported

Other related findings

- The percentage of persons linked to care increased from 90% to 100%, with all 15 persons who tested HIV positive linked to care. Linkage to care for this study is defined as the completion of a first medical visit after diagnosis into primary or specialty care. There was no timeframe for linkage to care for the first medical visit after diagnosis. The PRS Project did not evaluate the linkage to care outcome because no statistical test was reported.

Implementation-research related findings

- None reported

Process/study execution related findings

- Providers who lent their medical and clinical expertise to the program and the healthcare system quality team who championed the alert activation through partnership with EMR technology were key throughout the design and implementation of the initiative.

Adverse events

- The author did not report adverse events.

Funding

- None reported

REFERENCES AND CONTACT INFORMATION

Tapp, H., Ludden, T., Shade, L., Thomas J., Mohanan, S., & Leonard, M. (2020). [Electronic medical record alert activation increases hepatitis C and HIV screening rates in primary care practices within a large healthcare system](#). *Preventive Medicine Reports*, 17, 101036. doi: 10.1016/j.pmedr.2019.101036

Researcher: **Hazel Tapp, PhD**

Vice Chair for Research

Department of Family Medicine

Atrium Health

Charlotte, North Carolina

Email: hazel.tapp@atriumhealth.org

