Team Triage Intervention, Including Licensed Practical Nurse, to Increase HIV Testing Rates in the Emergency Department: A Quality Improvement Project

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Contribution to Emergency Nursing Practice

- The current literature on the screening for human immunodeficiency virus (HIV) led to this practice improvement project, which was to increase HIV screening tests in the emergency department by involving licensed practical nurses (LPNs).
- This article contributes to the development of this practice improvement project, the primary outcome of which was a significant increase in the number of HIV tests performed each month and the percentage of patients being tested for HIV.
- Key implications for emergency nursing practice found in this article are that LPNs can assist emergency registered nurses in improving HIV screening rates, which helps reduce the overall morbidity, mortality, and disease burden of HIV.

Abstract

Introduction: Emergency departments have an important role in screening for human immunodeficiency virus infection and reducing the morbidity, mortality, and transmission of the human immunodeficiency virus. There are debates about human immunodeficiency virus screening, including opt-in, opt-out, and active choice models. Previous studies have shown that multiple factors affect the patient rate of acceptance, including where, when, and by whom the screening is offered. The purpose of this quality improvement project was to test a team-based triage intervention to improve the amount of HIV testing done in our emergency department.

Methods: The design was a single site quality improvement intervention with post-intervention monthly rates compared to historic monthly rate controls. The intervention focused on the introduction of a Licensed Practical Nurse in addition to the current triage process and personnel. The percentage of patients receiving human immunodeficiency virus testing and the number of tests sent per month before and after the implementation of the intervention were measured.

Results: Our results show that 0.6% (SD $<$ 0.01) and 2.5% (SD 2.2) of patients received human immunodeficiency virus testing before and after implementation of the intervention, respectively (χ^2 = 501.76, $P < 0.05$). A mean of 37.4

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(SD = 12.91) and 151.3 (SD = 33.34) human immunodeficiency virus tests were sent per month before and after implementation of the intervention, respectively (t = 8.53, $P < 0.001$).

Discussion: This process intervention, in which licensed practical nurses offered human immunodeficiency virus screening tests during team triage, resulted in a 3-fold increase in the percentage of patients being tested for human immunodeficiency virus.

Key words: Licensed practical nurse; Team triage; Human immunodeficiency virus screening; Human immunodeficiency virus testing

Introduction

The emergency department has an important role in the early diagnosis of human immunodeficiency virus (HIV) infection and reducing the morbidity, mortality, and transmission of HIV globally. For decades, there have been debates about how patients would be screened and tested, with the objective to increase the low testing rates seen in hospitals.[1] Screening strategies such as the following were used:

1. Opt-in screening—patients are informed that the test is available but not tested unless they specifically request to be tested
2. Opt-out—patients are tested, unless they specifically request not to be

In 2006, opt-out HIV screening received attention when the United States Centers for Disease Control and Prevention (CDC) revised HIV testing guidelines to suggest nontargeted opt-out testing. A substantial update from previous published guidelines was introduced, stating that, for patients in all health care settings (including emergency departments), HIV screening is recommended after the patient is notified that the testing will be performed, unless the patient declines.[2] Some states, including New York, require HIV testing be offered to ED patients. Although opt-out testing has been shown to increase testing rates within the different hospital settings,[3] most hospitals have not yet acted on the opt-out recommendations by the CDC. This is partly because of questions regarding the percentage of positive findings compared with the number of tests that may be performed and the unforeseeable long-term outcome of care, if an uninformed patient tests positive.

Other strategies, such as "active choice," have been researched. A subtle difference from the opt-in strategy, active choice informs patients of the HIV screening tool and then specifically asks whether they would like to be tested or not.[3] With added information and a direct yes-or-no response from the patient, it was hypothesized that testing rates would be higher than opt-in rates. More importantly, if patients are at a higher risk, there may be a major difference in patient preference for testing and behavior. A nonblinded, randomized clinical trial in an emergency department of an urban teaching hospital and regional trauma center identified that testing rates increased from opt-in, to active choice, with the highest rates being in the opt-out group.[3] The study also identified that specifically asking a patient whether they would like to be tested or not (active choice group) increased the testing rates as opposed to the opt-in group by nearly 13%. In addition, higher-risk patients identified by a questionnaire correlated with increased rates of acceptance of the screening tests. Thus, the way in which the screening test is offered influences the patient rate of acceptance. Moreover, who is offering the test and where it is offered (ie, bedside, triage, or waiting room) may affect the rates of acceptance.

Our institution implemented a team approach to ED triage involving physicians, advanced providers (nurse practitioners [NPs]/physician assistants [PAs]) working alongside registered nurses (RNs), licensed practical nurses (LPNs), and clinical assistants to facilitate the flow of patients from the front door of the emergency department into the clinical space. Theoretically, this model may improve wait times, decrease ED length of stay, decrease walk-outs, and decrease mortality.[4,5] The purpose of this quality improvement project was to test a team-based triage intervention to improve the amount of HIV testing done in our emergency department.

Methods

The design was a single site quality improvement intervention with post-intervention monthly rates compared to historic monthly rate controls. The intervention focused on the introduction of an LPN in addition to the current triage process and personnel. The percentage of patients receiving HIV testing and the number of HIV tests sent per month

before and after the implementation of LPNs offering HIV screening tests were studied. This study was submitted to the institutional review board and determined to be exempt as quality improvement work that did not require full institutional review board approval.

This study was conducted in a large, suburban, level 1 trauma center with nearly 100,000 yearly patient visits. We implemented a specific effort to have department-trained health care providers, LPNs, discuss the HIV screening with patients during the team triage process and enroll them for the screening test. Consistent with the idea of active choice, we intended to educate our patients of the importance of HIV screening, with the belief that testing rates would increase.

Before the integration of a team triage, HIV screening was the responsibility of the primary RN in this busy, high patient-to-nurse ratio emergency department. On arrival to the institution and completion of triage, the triage RN would provide the patient with the NY State Department of Health's "7 Key Facts to Know Before Getting an HIV Test" (Sidebar).[6] The primary RN would offer HIV screening at the bedside after the initial licensed independent practitioner (LIP) examination was completed. This process would be carried out during the initial RN intake, including chief complaint, past medical history, vital signs, and initial phlebotomy. After completing the screening, the RN would complete an HIV offer task in the electronic medical record. If the patient consented to the screening, the LIP would receive a task to order the HIV test. The compliance was poor with regard to our quantity of screenings, which we believed was because of this multistep process.

In our emergency department, LPNs were already part of the triage process; they placed intravenous lines, drew blood, and had direct contact with a significant number of patients. After completion of the RN triage, the LPN greeted the patient in our treatment space with the LIP. Our intervention involved the LPN offering HIV testing at this point of the team triage process. An early offer of an HIV test was carried out, with a brief interaction, and information was provided. LPNs asked patients, "As part of our exam today, the Department of Health requires that we offer an HIV screening test to all patients. Would you be interested in that screening today?"

HIV collection data are kept as part of the quality improvement process at our hospital. Data are reported monthly on the percentage of patients who accept the HIV offer and the number of HIV tests sent. Pre- to post-intervention differences were analyzed using the independent t-test for continuous outcome variables and χ^2 for categorical outcome variables.

SIDEBAR

NY State Department of Health: 7 Key Facts to Know Before Getting an HIV Test[6]

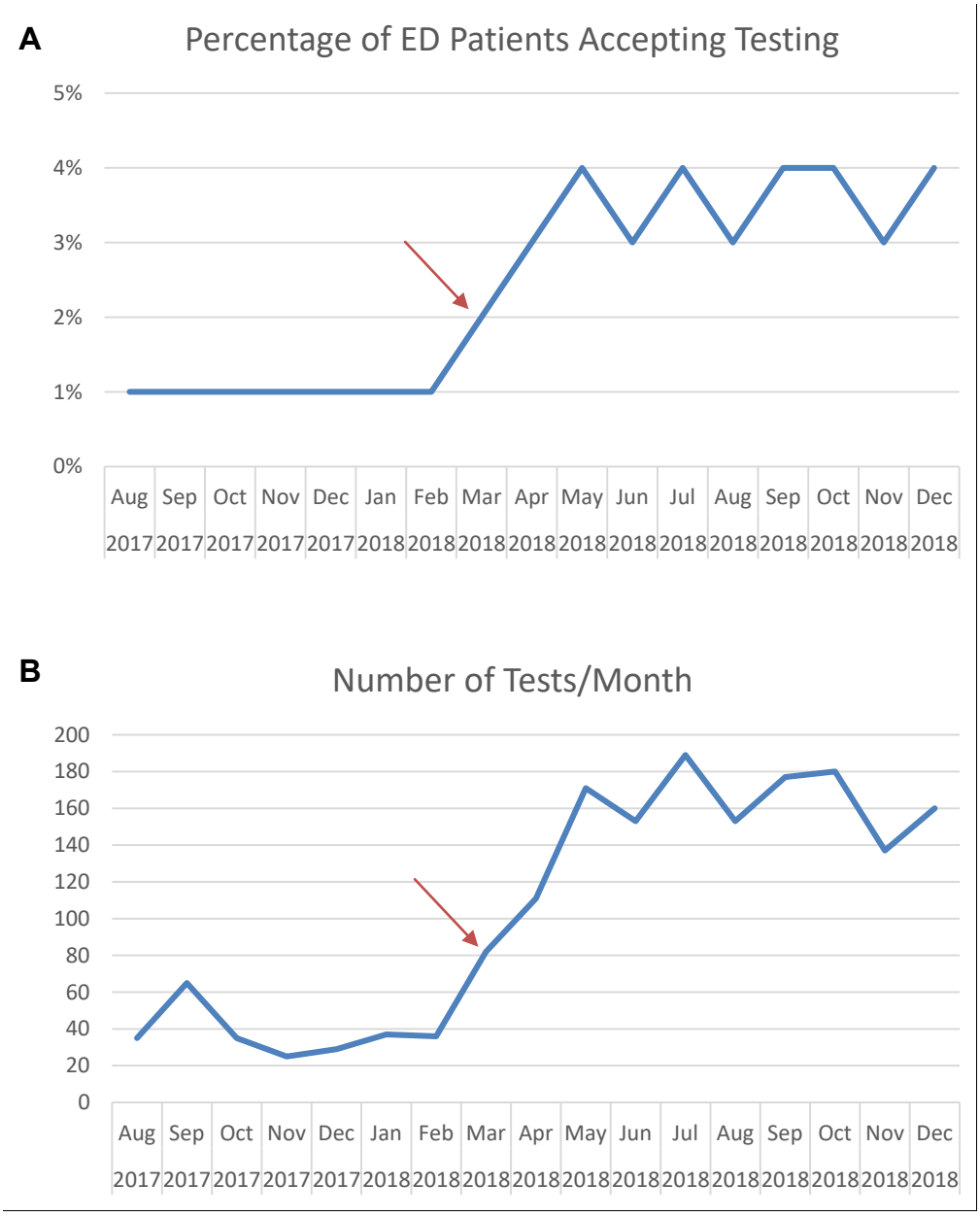
1. HIV is the virus that causes acquired immunodeficiency syndrome (AIDS). It can be spread through unprotected sex (vaginal, anal, or oral sex) with someone who has HIV; contact with HIV-infected blood by sharing needles (piercing, tattooing, drug equipment, including needles); by HIV-infected pregnant women to their infants during pregnancy or delivery, or by breastfeeding.
2. There are treatments for HIV/AIDS that can help a person stay healthy.
3. People with HIV/AIDS can use safe practices to protect others from becoming infected. Safe practices also protect people with HIV/AIDS from being infected with different strains of HIV.
4. Testing is voluntary and can be done without giving your name at a public testing center (anonymous testing).
5. By law, HIV test results and other related information are kept confidential (private).
6. Discrimination based on a person's HIV status is illegal. People who are discriminated against can get help.
7. Consent for HIV-related testing remains in effect until it is withdrawn verbally or in writing. If the consent was given for a specific period, the consent applies to that time period only. Persons may withdraw their consent at any time.

Results

Our results show that 0.6% (SD $<$ 0.01) and 2.5% (SD 2.2) of patients received HIV testing before and after implementation of the team triage process, respectively ($\chi^2 = 501.76$, $P < 0.05$) (Figure, part A). A mean of 37.4 (SD = 12.91) and 151.3 (SD = 33.34) HIV tests were sent per month before and after implementation, respectively ($t = 8.53$, $P < 0.001$) (Figure, part B).

Discussion

HIV screening acceptance rates by patients is multifactorial, including the patient's belief system as well as where, when, and by whom the question is asked. We made several changes to our traditional HIV screening offer, originally performed by the primary RN. Instead of a multistep process in which the RN listed key facts about HIV testing,



FIGURE

(A) The percentage of ED patients who accepted human immunodeficiency virus (HIV) testing each month is plotted. The arrow indicates the month this practice improvement process was implemented. (B) The number of HIV tests performed each month is plotted. The arrow indicates the month this practice improvement process was implemented.

asked the patient whether they would like to be screened, completed a task in the medical records, and then the LIP had to order the test, our intervention simplified the process. In this practice intervention, the LPN provided HIV information and asked if the patient was interested in screening during team triage, while the LIP was present to order the test. In addition, the HIV screening question was asked early, during team triage, instead of during the primary RN's intake when other questions and tasks were being performed, such as the chief complaint, past medical history, vital signs, and phlebotomy. Furthermore, in our intervention, LPNs asked the HIV screening question, instead of the primary RNs, who were already very busy taking care of multiple patients.

Our practice intervention in which LPNs offered the HIV screening test to patients during team triage, resulted in a 3-fold increase in the percentage of patients being tested for HIV. There was also a statistically significant increase in the number of HIV tests sent per month, compared with the previous model, in which the primary RN would offer HIV screening at the bedside after the LIP initial examination. Given the success of this model, future studies on implementing similar interventions for other tests would be beneficial.

The goal of triage is to rapidly sort a large number of patients to various locations in the emergency department so that patients are seen in a timely manner based on their presentation severity. An unintended consequence of this quality improvement project, where we introduce blood draws, IVs, and prescriptions in triage, includes diverting the rapidly sorting triage process. These added tasks may delay priority patient interventions and slow triage flow.

Limitations

This intervention demonstrated the positive impact of having LPNs discuss HIV screening with patients during team triage. This study was conducted in a large, suburban level 1 trauma center, and although we anticipate similar improvements in other emergency departments that implement this intervention, our study was conducted only at 1 center. This intervention was also carried out in an emergency department that uses a team triage model containing RNs, LPNs, PAs, and NPs and thus was not tested in traditional RN-based triage models. In addition, the costs of the HIV test might be a limitation to some patients, as some might have to pay out-of-pocket.

Implications For Emergency Nursing

Our practice improvement intervention for improving HIV screening testing in the emergency department by involving LPNs in offering HIV screening can help increase the number of HIV tests being performed and the percentage of patients being screened. Ultimately, this helps reduce the overall morbidity, mortality, transmission rates, and future health care costs of HIV. Furthermore, shifting the role of asking HIV screening questions to LPNs helps reduce workload for emergency RNs, who are already busy taking care of sick patients.

Conclusions

Involving LPNs in offering HIV screening tests to patients during team triage resulted in an increase in the percentage of patients being screened for HIV and the number of HIV tests sent per month, compared with the previous model, in which patients were offered HIV screening tests during the primary RN's initial bedside encounter.

Author Disclosures

Conflict of interest: none to report.

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