



Effectiveness of Rapid HIV Testing at Re-Engaging Previously HIV Positive Patient to HIV Specialty Care in an Urban Emergency Department in New Orleans

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ABSTRACT

Background: The purpose of the study is to determine how effective the institution of rapid HIV testing is in linking and re-engaging patients with known HIV who are out of care into HIV specialty care.

Methods: A retrospective review was conducted of the medical records of patients who agreed to a rapid HIV test in the emergency department in the initial year of institution of the rapid test (2008).

Results: One hundred and thirty eight patients out of 8,204 patients tested positive for HIV in the first year of the institution of the rapid HIV test. Three (2%) were false positives and thirty six (26%) had a previous diagnosis of HIV. Among the patients with a previous diagnosis of HIV, 7 patients (19%) were already in care, defined as a visit to an HIV specialist in the previous six months. Of the remaining 29 patients, 19 (66%) were male, 23 (79%) were African-American, and the average age was 39 (range 26 to 58), which was similar to the demographics of the newly diagnosed patients. Fifty seven percent of these patients had a CD4 count less than 200 at the time of the rapid test. The mean CD4 count was 178 (95% CI 78 to 277, median 164). Thirteen were linked to care (45%) within 3 months, 16 (55%) within 6 months, and 18 (62%) within 1 year. In the first year the newly linked patients had an average of 4.3 visits to an HIV specialist, in the second year the average number of visits was 3.9 visits. Seven of the 18 (39%) were not retained in care, as defined as less than 2 visits per year in their second year of care. Mean CD4 counts of the linked patients at two years was 223 (95% CI 84 to 262, median 199), which was not significantly different from baseline values.

Conclusion: Rapid HIV testing in the emergency department was an effective intervention for linking and re-engaging patients with known HIV in the first year of institution of the tests successfully identified 29 patients with a previous diagnosis of HIV that were out of care and linked the majority (62%) of these patients to an HIV specialist. This group of patients, with a previous diagnosis of HIV, were difficult to retain in care. The not significant changes in CD4 counts may be a reflection of higher clinic and medication non-adherence, that is likely more prevalent in an out of care population.

INTRODUCTION

More than 1.1 million people in the U.S. are living with HIV. As of 2011, there are 7,262 persons living with HIV/AIDS in New Orleans. The current CDC guidelines recommend routine HIV screening for all people 13-64 years old in all healthcare settings.

Expanded screening is important because testing based on risk assessment fails to detect many infected persons. Expanded screening may also detect previously diagnosed patients with HIV who have fallen out of care.

Once HIV-infected patients are identified, linkage to HIV specialty care followed by appointment adherence is essential to HIV management. However, a number of studies have demonstrated that a large proportion of newly diagnosed HIV patients either fail or experience difficulty in establishing and maintaining HIV care.

Appointment non-adherence has been associated with younger age, African American race, substance abuse disorders, and lack of insurance or use of public health insurance. Appointment non-adherence has also been associated with higher HIV viral load, lower CD4+ cell count, increased likelihood of antiretroviral resistance, and increased mortality. Conversely, there is a positive association between regular HIV care and reduced sexual risk behaviors.

Louisiana State University (LSU) Interim Hospital, part of the LSU Health System, primarily serves uninsured and underinsured patients, and is capable of linking patients to high quality sub-specialty care regardless of insurance status. Located in the heart of metropolitan New Orleans, it is strategically placed to identify and link previously undiagnosed HIV patients. The Emergency Department began offering free rapid HIV tests to its patients in February of 2008.

RESULTS

TABLE 1. DEMOGRAPHICS

| VARIABLE | PREVIOUSLY POSITIVE N = 29 (%) | NEWLY POSITIVE N = 99 (%) |
|---------------------------------------|-----------------------------------|------------------------------|
| Age - mean (range) | 39 (26-58) | 39 (19-61) |
| Male | 19 (66) | 68 (69) |
| Race | | |
| African-American | 23 (79) | 77 (78) |
| Caucasian | 4 (14) | 16 (16) |
| Multiracial | 1 (3) | 2 (2) |
| Insurance | | |
| Any insurance including Medicaid | 15 (52) | 23 (23) |
| Uninsured | 6 (21) | 42 (41) |
| Free Care | 8 (27) | 34 (34) |
| Other | | |
| IV drug use | 5 (17) | 21 (22) |
| Drug use, non-IV | 18 (62) | 53 (53) |
| Mental Illness | 9 (31) | 21 (22) |
| Sexually transmitted infection | 13 (36) | 26 (26) |
| Alcohol use | 10 (35) | 58 (59) |
| Tobacco use | 16 (55) | 62 (63) |
| Admitted to hospital at time of RT | 10 (35) | 33 (33) |
| Opportunistic infection at time of RT | 1 (3) | 16 (16) |
| Median length of stay (range) | 5 (1-40) | 5 (1-42) |
| CD4 count < 200 at time of RT* | 17 (57) | 49 (49) |

RT - Rapid test
 * - Indicates time of second rapid test for previously positive patients

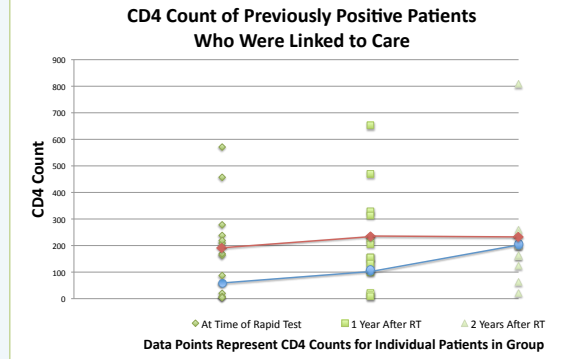
RESULTS SUMMARY

- One hundred and thirty-eight patients out of 8,204 patients tested positive for HIV in the first year of the institution of the rapid HIV test.
- Thirty-six (26%) had a previous diagnosis of HIV. Among those, 7 (19%) patients were already in care, defined as a visit to an HIV specialist in the previous six months.
- Demographics were similar between the two groups. See Table 1.
- Among the remaining 29 (81%) patients who were out of care, 13 (45%) were linked to HIV care within three months of the rapid test, 16 (55%) were linked within 3-12 months after the rapid test, and 11 (38%) were not linked at all within a year after the rapid test.
- Among the previous positives, there was 62% linkage at 1 year, while the newly diagnosed patients demonstrated 60% linkage at 1 year.
- CD4 count trended up in the linked patients but were not significant. Viral load trended down but was also not significant.
- The majority (61%) of patients linked to an HIV specialist were started on HAART within 1 month of their first appointment.
- Thirty-nine percent of previously positive patients were not retained in care during the second year.

TABLE 2. LINKAGE DATA

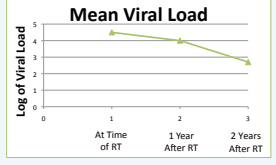
| VARIABLE | Total Linked Patients N = 28 (6%) | Linked in < 3 months N = 13 (5%) | Linked in 3-12 months N = 5 (5%) |
|---|--------------------------------------|-------------------------------------|-------------------------------------|
| Number linked within 28 days of RT | 8 (44) | 8 (62) | n/a |
| Method of RT | | | |
| Oral | 13 (72) | 10 (77) | 3 (60) |
| Serum | 2 (11) | 0 (0) | 2 (40) |
| Average number of appointments with HIV specialist | | | |
| Year 1 after RT | 4.2 | 4.3 | 3.6 |
| Year 2 after RT | 3.9 | 3.3 | 5.4 |
| Average number of CD4 Measurements | | | |
| Year 1 after RT | 2.8 | 3.3 | 1.6 |
| Year 2 after RT | 3.2 | 3.0 | 3.8 |
| Mean CD4 count | | | |
| At time of RT | 178 | 195 | 72 |
| 1 year after RT | 196 | 234 | 103 |
| 2 years after RT | 223 | 230 | 205 |
| Mean CD4 % | | | |
| At time of RT | 12 | 12 | 10 |
| 1 year after RT | 14 | 16 | 11 |
| 2 years after RT | 17 | 18 | 14 |
| Mean Log of Viral Load | | | |
| At time of RT | 4.5 | 4.5 | n/a |
| 1 year after RT | 4.0 | 3.9 | 4.3 |
| 2 years after RT | 2.7 | 3.1 | 1.9 |
| Average number of medical visits* prior to RT | | | |
| ED | 0.9 | 0.5 | 1.8 |
| Clinic | 0.3 | 0.1 | 0.8 |
| Number starting HAART within 1 month of first appointment | 11 (61) | 8 (62) | 3 (60) |
| Number not retained in care [†] | 7 (39) | 5 (38) | 2 (40) |

n = Non-HIV medical encounters within 6 months prior to rapid test
 † - Retained in care is defined as less than 2 visits per year during the second year of care.



Mean CD4 Count:

- Linked in < 3 Months
- Linked in 3-12 Months
- Total Linked



CONCLUSION:

- Rapid HIV testing as currently recommended by CDC guidelines can identify previously HIV-positive individuals who are out of care and link them back into care at a similar rate as newly diagnosed patients.
- However, our study found that 39% of these patients were not retained in care after two years. Although, though the sample size was limited, there was a non-significant trend toward increasing CD4 count and decreasing viral load over this period.
- In conclusion, ED-based rapid HIV testing is an effective means of re-identifying and linking previously positive patients to HIV specialty care. Nevertheless, retention remained poor and effective interventions aimed at retention need to be designed and implemented for this at-risk patient group.

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