Impact of Rapid Hepatitis C testing on Receipt of Hepatitis C Results in a Public STD Clinic

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Abstract

Background
With rapid improvements in the efficacy and safety of HCV treatments, the factors that will determine net treatment effectiveness are the rates of testing in high risk populations and linkage to care. Rapid hepatitis C tests have been demonstrated to be accurate in diagnosis of hepatitis C. Their impact on receipt of hepatitis C antibody results in public health settings such as sexually transmitted disease (STD) clinics is not known.
Methodology
Rapid hepatitis C antibody testing with OraQuick HCV Rapid Antibody Test (OraSure Technologies, Bethlehem, Pennsylvania) was implemented and routinely offered to all STD clinic attendees at the Baltimore City Health Department (BCHD) Druid STD clinic starting in June 2013. Prior to this, risk-based hepatitis C testing with a standard laboratory-based ELISA was offered at the BCHD STD clinics. We compared the rates of documented hepatitis C post-test counseling and linkage to care of those tested by the rapid method to those tested with the standard of care, ascertained by review of electronic medical records. Written documentation of provision of hepatitis C antibody results was available for patients who received rapid testing. For those who received the standard of care, failure to return to the STD clinic 6 months after laboratory hepatitis C antibody testing was considered lack of receipt of results.
Results
Prior to implantation of the rapid test, 760 individuals (65.5% males) received a standard hepatitis C ELISA, which requires 7 days for results to be available, between January 1, 2012 and December 30, 2012. From June 24, 2013 to January 31, 2014 2915 individuals were offered the rapid hepatitis C test with results available in 20 minutes, of whom 2208 (76%) accepted and received rapid HCV testing (61% males). Patients receiving standard of care hepatitis C testing were on average older than rapid hepatitis C tested patients: median age (IQR); 34 (25-47) years and 29 (24-41) years respectively. Out of 137 individuals with positive hepatitis C antibody test results from the standard of care, 90 (66%) individuals received their hepatitis C antibody results. In contrast, 138 (98%) of 141 hepatitis C antibody positive individuals from the rapid tested patients received their hepatitis C antibody results, alcohol screening and posttest counseling on the day of rapid testing; p-value <0.001. Additionally for individuals found to be hepatitis C antibody positive on rapid testing, 135 (96%) of 141 had blood drawn for follow up HCV RNA testing on the day of rapid hepatitis C testing.
Conclusion
Implementation of rapid hepatitis C tests has the potential to dramatically reduce loss to follow up and facilitate early linkages to HCV care.

Introduction

• There are an estimated 3.2 million Americans with chronic hepatitis C infection.
•Rapid improvements in efficacy, safety and tolerability of hepatitis C treatments hold a promise of HCV cure for many
• However an estimated 50-80% of HCV infected Americans are unaware of their infection
•Novel methods and avenues for screening and linkage to HCV care are required to improve rates of timely diagnosis and treatment

Study Aims
•To assess the impact of rapid hepatitis C testing on receipt of HCV antibody results in a public sexually transmitted diseases (STD) clinic

Methods

Project Site

Baltimore City Health Department (BCHD) STD clinics

- Walk in public STD clinics located in inner city Baltimore, providing STD testing and treatment, confidential HIV testing and care and hepatitis screening
- Major source of healthcare for surrounding medically underserved communities
- Annual patient volume of 30,000 patient visits
- Patients routinely given a walk-in follow up appointment for receipt of test results 1 week after initial encounter

BCHD Hepatitis Screening program

- The STD clinics have traditionally offered risk based hepatitis C testing with a standard laboratory based ELISA on venipuncture collected blood sent out to a standard laboratory. Results for this test are available within 7 days.
- In June 2013, rapid hepatitis C testing was implemented and routinely offered to all STD clinic attendees
- Rapid HCV testing is performed on-site on blood collected by finger prick or venipuncture using the OraQuick HCV Rapid Antibody test (OraSure Technologies, Inc. Bethlehem, PA). Results are available in 20 minutes.

Study Inclusion Criteria

Rapid HCV Antibody Testing

- Rapid hepatitis C antibody testing as part of evaluation at a BCHD STD Clinic between June 24, 2013 and January 31, 2014

Traditional Laboratory Based HCV Antibody Testing

- Hepatitis C antibody testing as part of evaluation at a BCHD STD Clinic between January 1, 2012 and December 30, 2012

Outcomes

Receipt of hepatitis C antibody results

•*Traditional laboratory based hepatitis C antibody test:* Return to the STD clinic within 6 months of initial HCV antibody testing
•*Rapid hepatitis C antibody test*: Documented hepatitis C post test counseling if HCV antibody positive

Analysis:

•Chi squared tests were used to compare categorical variables

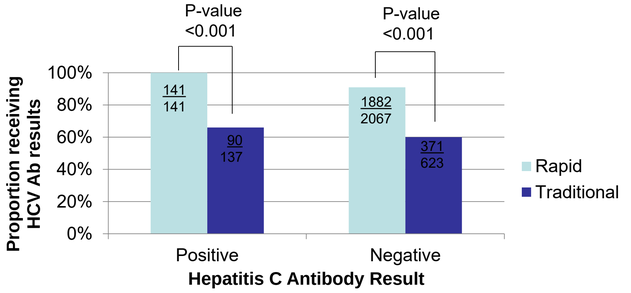
Results

Table 1: Baseline Demographics

Characteristic	Rapid HCV Antibody test n=2208	Traditional HCV Antibody test [a] n=760
Mean age, years	33	37
Male, n (%)	1344 (61)	498 (65)
African American, n (%)	2022 (92)	613 (81)
HIV infected, n (%)	53 (2.4)	108 (15)
MSM[c] n (%)	131 (6)	63 (8)
Hazardous alcohol use in last 30days[b] n (%)	**620 (28)**	135 (18)
Illicit drug use[d] n (%)	100 (5)	84 (11)

[a]Oraquick® HCV Rapid Antibody test, OraSure Technologies, Inc, Bethlehem, PA
[b]Defined as 4 (for a woman) or 5 (for a man) or more drinks at one sitting in the past 30 days, or sex under the influence of alcohol
[c]MSM: Men who have sex with men
[d]Defined as reported injection drug, heroin, crack or methamphetamine use in the past 30days

Figure 1: Proportion of individuals receiving HCV antibody results and counseling by HCV antibody status



- 138 (98%) of 141 individuals testing positive on HCV Rapid antibody testing were informed of their results on the day of testing
- Of the 141 HCV antibody positive patients detected on rapid HCV antibody testing, 135 (96%) had follow up HCV RNA drawn on the day of rapid antibody testing
- There is no information available on follow up HCV RNA testing for the traditional tested group

Table 2: Time to receipt of HCV Antibody results for antibody positive patients

Number (%) who received results in days following HCV Ab test	Rapid n=141	Traditional N=137
0 (Same day)	138 (97.8%)	N/A
1-20 days	2 (1.4%)	67 (48.9)
21-120 days	1 (<1%)	20 (14.6)
>120 days		8 (5.8)
Never		42(30.7)

N/A: Not applicable

- 98% of HCV infected patients diagnosed on rapid testing received medical education, alcohol use and harm reduction counseling, as well as initiation of linkage to HCV care on the day of HCV testing
- All individuals received alcohol use screening with an AUDIT followed by brief intervention and referral for therapy (SBIRT) if indicated.

Summary

- Rapid hepatitis C testing can be successfully implemented in public health settings such as public STD clinics.
- The use of rapid tests can result in significant improvements in the receipt of hepatitis C testing results.
- For the majority of patients HCV antibody testing, post-test counseling and follow up HCV RNA testing could be accomplished in a single visit.
- Earlier and higher rates of receipt of HCV antibody results and counseling have the potential to facilitate
  - receipt of messages for prevention of HCV infection in negatives
  - harm reduction in positives-alcohol use screening, brief intervention and referral to therapy (SBIRT) has been shown to be an effective means to reduce drinking
- Use of rapid hepatitis C tests have the potential to dramatically reduce loss to follow up and enhance linkage to HCV care.

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