Low HCV Testing Uptake of the Current Birth Cohort Guidelines

Alexander Geboy[1], Hyun Cha[1], Idene Perez[1], Matthew Bell[1], Sandeep Mahajan[2], Adebisi Ayodele[2], Dawn Fishbein[2]
[1]MedStar Health Research Institute, Hyattsville, MD, [2]MedStar Washington Hospital Center, Washington, D.C.

Alexander G. Geboy
202-877-0679
Alexander.G.Geboy@medstar.net
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BACKGROUND

•In Washington, DC from 2008-2012 there were 9,819 newly confirmed cases of hepatitis C virus (HCV) with 15,915 total cases documented during this timeframe. The majority of new cases were between the ages of 50-59 (47.9%), which was twofold compared to any other age group. The District HCV rate of 2.5% in all persons will likely increase with expanded testing.

•The HepC Linkage to Care Navigation Program at MedStar Washington Hospital Center (MWHC) in Washington, DC was established to meet the growing demand for increased HCV support. Its mission is to build capacity within the MedStar Health system for effective prevention, screening, management, and treatment of HCV.

•The objectives of this program are to:

- Increase Birth Cohort (BC) testing for those without predefined risk factors, and not previously HCV tested or positive.
- Identify those HCV positive and link them to appropriate care, treatment, and preventative services.
- Monitor the severity of HCV infection upon identification.

METHODOLOGY

In December 2012, with support from CDC Prevention and Public Health Funds (PPHF) and later non-PPHF Supplemental funds, an HCV testing program was established in the Primary Care Clinic (PCC) at MedStar Washington Hospital Center.

Patients were identified using Centricity Electronic Health Records (EHR) technology and SAP Crystal Reports. A report was built using SAP Crystal Reports software that mirrored eligibility criteria, which included persons born within 1945 and 1965. Once a report was generated, charts were manually screened for high-risk factors in their medical history, social history, or problems list (e.g., intravenous drug use, and history of HIV infection). Popup reminders with focused messages were then inserted into each eligible EHR.

Once identified as HCV Ab+, patients were referred to either the HepC team, ID, or GI for follow-up care.

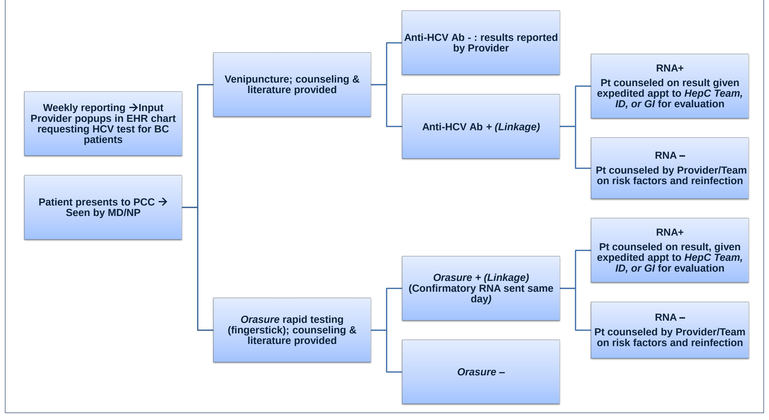


Figure 1: HCV Care Cascade

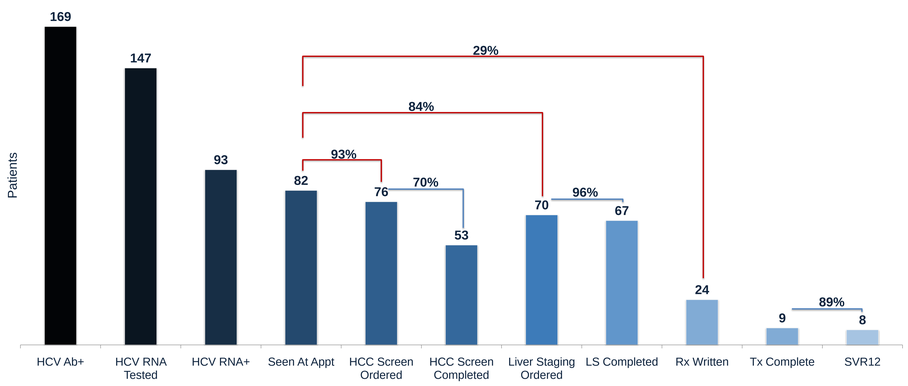
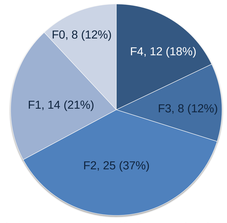


Figure 2: Fibrosis Score at Identification*



* Fibrotest and liver biopsy staging scores were combined for the aggregate; between scores (i.e., F1-2) were rounded up to the whole stage

Table 1. Primary Care Clinic Appointments

	Total Appointments	Unique Appointments
	N (%)	N (%)
Total	9496	4695
Tested	2276 (24.0)	1452 (30.9)
Missed	2668 (28.1)	1179 (25.1)
Canceled/No Show*	4552 (47.9)	2064 (44.0)

*Cancelled and No-show appointments were not differentiated during October 2012-September 2013

Table 2: Characteristics of those tested at MedStar Washington Hospital Center
October 2012-April, 2015

	Total HCV Ab Tests Performed		HCV Ab Positive		HCV RNA Positive	
Characteristics	N (%)		N (%)		N (%)	
Total	2276 (100)		169 (7.4)		93/147* (63.2)	
Age (mean ± SD)	58.6 ±		60.3 ±		59.9 ±	
Sex						
Women	1477 (64.9)		80(47.3)		41 (44.1)	
Men	799 (35.1)		89(52.6)		52 (55.9)	
Race/Ethnicity						
Non-Hispanic, black/African American (b/AA)	1901 (83.5)		153 (90.5)		86 (92.5)	
Intra-Group (b/AA Women/Men)	1249 (65.7)	652 (34.3)	73 (47.7) [73/1249 (5.8)]	80 (52.3) [80/652 (12.3)]	39 (45.3) [39/73 (53.4)]	47 (54.7) [47/80 (58.8)]
Non-Hispanic, white	173 (7.6)		8 (4.7)		3 (3.2)	
American Indian/Alaskan Native (AI/AN), Hispanic	37 (1.6)		4 (2.4)		3 (3.2)	
Asian	10 (0.4)		1 (0.6)			
Other/Declined/Don't Know	156 (6.9)		3 (1.8)		1 (1.1)	
Insurance**						
Public	1466 (64.4)		129 (76.3)		70 (75.3)	
Private	807 (35.5)		40 (23.7)		23 (24.7)	
Declined/Not Reported	3 (0.1)					
IVDU (Reported Post HCV Ab Test)[‡]			65/146 (44.5)[±]		40/93 (43.0)	
Intra-Group (IVDU)					40/65 (61.5)	

*22 patients were removed from this calculation; 4 were deceased prior to RNA testing, and 18 were either tested without result, or never tested
**Public insurance includes Medicare and Medicaid
‡N/A responses were NOT included in this calculation, but only those who answered OR that had it documented in the chart
±23 patients were removed from this calculation as IVDU was never ascertained

RESULTS

As of April, 2015:
- 7.4% of the 2276 tested were HCV Ab+, 63% had chronic HCV (HCV RNA+)
- Mean age of HCV Ab+ was 60 years; 53% were men
- 76% had public insurance (Medicare or Medicaid)
- 84% of those tested, and 91% of those HCV Ab+ were b/AA
- 11% of all men tested were HCV Ab+; 12% of b/AA men tested and 6% of b/AA women tested were HCV Ab+
- IVDU were more likely to have chronic HCV than non-IVDU (OR 2.4 [CI95 1.3-4.5])
- Though rapid HCV Ab tests were offered to PCPs, 2025 (89%) of all HCV Ab tests were from venipuncture

Those HCV Ab+ were more likely to be:
- Men than women (OR 2.2 [1.6-3.0]),
- b/AA men than b/AA women (OR 2.3 [1.6-3.1]),
- b/AA men than white men (OR 4.3 [1.0-17.8]) and white women (OR 2.4 [1.0-5.7])

Testing between the two years remained steady, with 1123 (49%) tests completed during PPHF funding, and 1153 (51%) occurring through April of the Supplemental funding period.

Regarding HCV Ab+ linkage, 82 (88%) were seen by ID or GI; this adherence rate of 88% is significantly greater than the overall Primary Clinic Appointment adherence rate of 50.3%.

CONCLUSION

The HCV Ab+ prevalence rate of 7.4% remained consistent over the two years and is significantly higher than the CDC Birth Cohort rate of 3.25% ($p<0.001$) and the Washington, DC rate of 2.5% ($p<0.001$), although the latter reports all ages. Additionally, the HCV Ab+ prevalence rate of 12.3% among b/AA men has remained consistent, and is statistically greater than the 8% reported by the CDC ($p<0.001$). It is remains clear that a better effort needs to be made to engage this population into care.

HCV chronicity (i.e. HCV RNA +) in the MWHC data revealed a rate of only 63%. Although, this rate is lower than the widely reported rate of 75-80%, it is with the range of 55%-85%. The higher rate in IVDU needs to be explored further in the Birth Cohort.

Risk factors should to be collected even on those HCV Ab negative in order to make more meaningful comparisons. However, even on those Ab+ the risk factors were not always ascertained appropriately and needs to be improved. The EHR template should be created in order to capture all risk factors for appropriate identification and counseling.

Overall testing uptake remains low at 24%, and the missed opportunity rate of 28% is unacceptable, despite educational sessions, talks, prompts to encourage testing uptake. It is unclear why testing uptake remains low. A provider survey has been disseminated to identify barriers to and improve testing. Primary care champions are needed to advocate for increased testing and to ensure linkage to care and engagement within the HCV care cascade. Testing needs to become more comprehensive, fully integrated, with *automated* EHR prompts and testing, and maintained as sustainable models, especially within primary care clinics.

Although testing was well below expected levels, linkage to care for those HCV Ab+ remained strong throughout the two years with 88% of those chronically infected being linked to care. The difference between testing uptake and linkage is a prominent gap in the cascade of care and needs to be addressed.

Given these high prevalence rates, new CMS recommendations, and improved therapeutic options available, testing initiatives in primary care settings need to be more rigorously upheld.

Author Disclosures:
Dawn A. Fishbein, MD has served on an Advisory Board for Boehringer Ingelheim
Alexander G. Geboy has served on an Advisory Board for Gilead Sciences, LLC. Both have grant funding from CDC and Gilead Sciences.