Hepatitis C Cascade of Care in Non-Birth Cohort Patients Within a Large Health System

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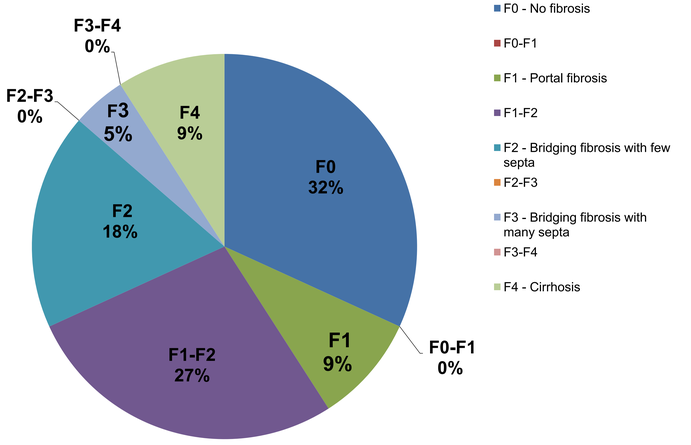
BACKGROUND

- Persons born between 1945 and 1965 ("baby boomers" or the Birth Cohort) comprise 75% of all hepatitis C virus (HCV) infected persons in the US; thus the Birth Cohort (BC) has been the primary focus in many linkage to care efforts.
- However, rising HCV incidence in populations born outside of the BC (non-BC) suggest a need to refocus testing and linkage to care efforts.
- The Centers for Disease Control and Prevention (CDC) reported that persons aged 30 and younger from non-urban areas compose the majority of acute HCV cases, identifying injection drug use as a main risk factor.
- Approximately 50% of people infected with HCV are unaware of their condition despite increased HCV testing guidelines and the existence of innovative and effective DAA treatment options.
- The objective of this study was to examine a system-wide HCV cascade of care model (HCoC) for the non-BC, which involved identifying HCV screening rates and institutional linkage to care proficiency within a large, integrated health care system.

METHODS

- With Gilead FOCUS funding, a retrospective chart review was conducted to identify non-BC antibody positive (HCV Ab +) persons across MedStar Health (MSH) from July 1, 2015 through December 31, 2016.
- Non-BC tests were used in this study as a marker for patients at high-risk for HCV.
- Monthly HCV testing data were extracted from Centricity EHR via chart review and SQL reporting and data was compiled and analyzed in Excel and SAS v.9.4. Geomaps were compiled using Environmental Systems Research Institute (ESRI), (2014). ArcGIS Desktop Help 10.3 Geostatistical Analyst.
- IRB approval was granted by MedStar Health Research Institute.

Figure 1. Liver Staging via Fibrosure at Initial Visit



For a list of references, please contact Chinyere Ukaegbu: chinyere.c.ukaegbu@medstar.net

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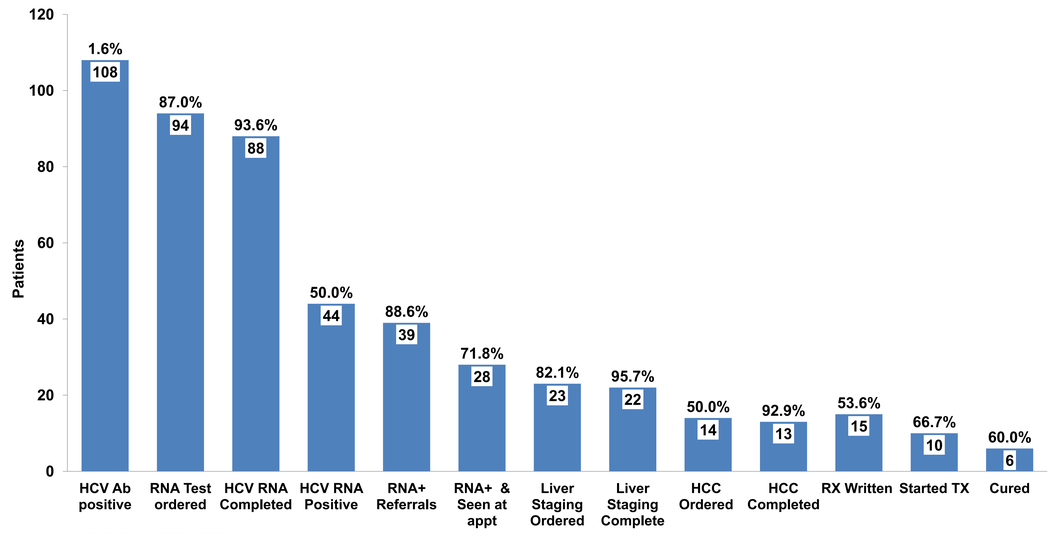
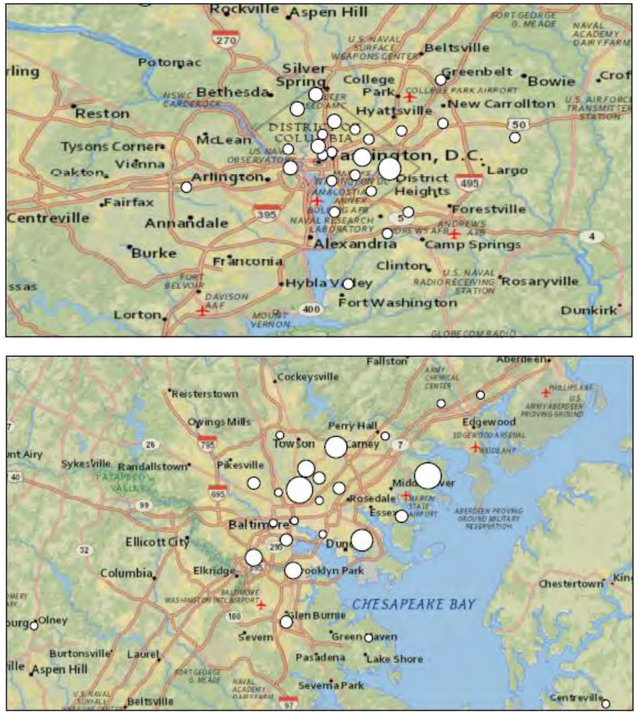
Figure 2. Non – Birth Cohort HCV Cascade of Care



*HCC = Hepatocellular Carcinoma Screening (US/CT/MRI)

Hepatitis C Cascade of Care

Figure 3. Geo-mapping of HCV Ab Positive Non-BC Patient by Home Zip Code (Washington DC and Maryland)



RESULTS

Table 1. Demographics

	Non- Birth Cohort Testing						
	HCV Ab Tested		HCV Ab Positive		p-value	HCV RNA Positive	
Characteristic	N	(%)	N	(%)		N	(%)
Total	6,926		108	1.6%		44/88	50.0%
Mean Age ± SD (<1945 birth year)	77.4 ± 4.8	-	74.8 ± 2.2	-		75.2 ± 2.7	-
Mean Age ± SD (>1965 birth year)	34.3 ± 8.8	-	38.7 ± 9.0	-		40.4 ± 8.6	-
Sex							
Female	3,824	(55.2)	46	(42.6)		14	(31.8)
Male	3,102	(44.8)	60	(55.6)	p<0.05	30	(68.2)
Race/Ethnicity							
White (non-Hispanic)	2,338	(33.8)	59	(54.6)	p<0.01	23	(52.3)
Black/African American (b/AA)	3,148	(45.5)	42	(38.9)		18	(40.9)
Asian	194	(2.8)	1	(0.9)		-	-
AI/AN	17	(0.2)	-	-		-	-
Unspecified/ Other	1,229	(17.7)	6	(5.6)		3	(6.8)
Primary Insurance Type							
Private	3,825	(55.2)	39	(36.1)		10	(22.7)
Public	2,263	(32.7)	67	(62.0)	p<0.0001	32	(72.7)
Medicare	573	(25.3)	17	(25.4)		10	(31.3)
Medicaid	1,690	(74.7)	50	(74.6)	* NS	22	(68.8)
Self Pay/Other	838	(12.1)	2	(3.0)		2	(6.3)

* There was no significance between Medicare and Medicaid regarding HCV Ab positivity.

- Between July 1, 2015 and December 31, 2016, 16,217 patients were screened for HCV across MSH, of which 42.7% (n=6,926) were identified as persons belonging to the non-Birth Cohort. Of this group, 108 HCV Ab+ patients were seen by approximately 72 providers across 40 provider locations. Additionally, nearly 90% of all those HCV RNA positive had fibrosis levels less than F3.
- Comparing gender and race, those HCV Ab+ were more likely to be white and male than b/AA and male (OR 1.7 [CI 1.0-2.9]).
- There were 4 median days between an HCV RNA+ diagnosis and sending a referral (max of 225 days). There were 32 median days between sending a referral and attending the first specialist appointment (min 13 days, max 258 days).
- There were 9 median days between first specialist visit and receiving a DAA prescription, (min 2 days, max 114 days). There were 29 median days between prescription and treatment initiation, with 25 median weeks between treatment initiation and cure.

CONCLUSION

- These data are congruent with the recent literature suggesting a higher prevalence of HCV infection in non-Birth Cohort white males. That 43% of all HCV testing at MSH (see Poster #545) occurred within the non-Birth Cohort group is encouraging considering testing in this group is likely driven by direct ascertainment of risk factors (RFs). However, it is unclear what the total eligible patient count was for this population.
- The ascertainment of RFs can present a barrier to implementing more targeted screening practices as they may be withheld by patients, unsolicited by providers, or contained as unstructured data within an EHR and potentially unsearchable (please see Poster #517 for risk factors pertaining to a subset of this chart review).
- The time between HCV Cascade of Care stages suggests education on non-BC risk factors, linkage, and retention strategies may be beneficial. Additionally, as compared to a BC population traditionally more concentrated within urban centers, the more dispersed distribution of the non-Birth Cohort suggests a need to factor provider location into testing and linkage to care strategies. Further analyses are needed.
- Importantly, that primary care providers are obtaining RNA tests and referring to care at high rates may indicate the need for improved testing measures for this group. Gaps appear in transitioning to specialty care, perhaps due to factors such as location of referred facility, insurance complications, and patient non-adherence, which all deserve further analysis.