One Year Results of a Community-Based Hepatitis C Testing and Linkage to Care Program

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Background

Chronic Hepatitis C virus (HCV) is a major public health concern and the leading chronic viral cause of death in the United States. Less than 1/3 with HCV are aware of their infection. Community-based testing strategies are needed, and uncertainty exists surrounding the implementation of HCV testing, linkage to care, and treatment.

Methods

We conducted a rapid testing and linkage to care program at urban community health centers and alcohol and drug treatment programs. HIV test counselors were trained on HCV testing methods. Demographic, risk-factor, and clinical data were collected prospectively. Rapid HCV Antibody testing was followed by post-test counseling, confirmatory viral load testing, and linkage to care.

Figure 1 – FHCSD HepCareConnect Rapid Testing Algorithm

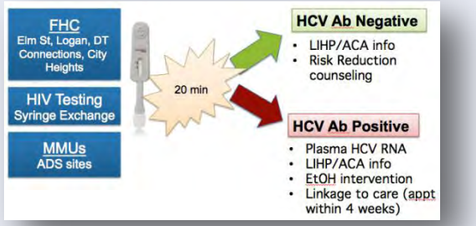


Figure 2 –Distribution of HCV Ab+ patients by Age

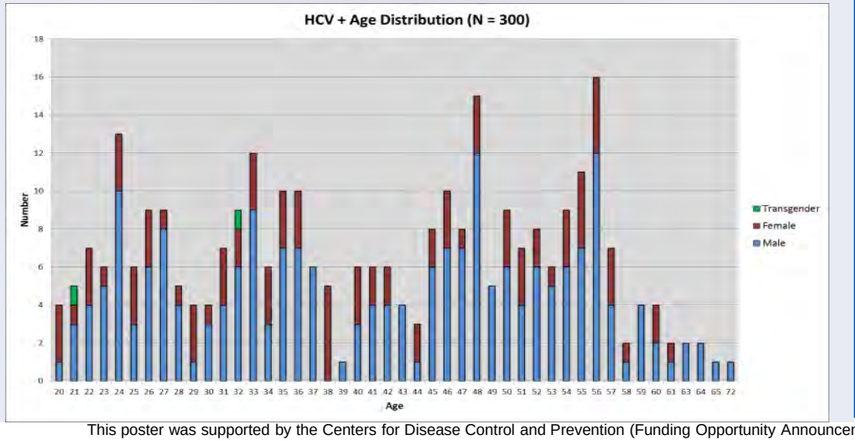


Table 1. Sociodemographic Characteristics of Participants: Hepatitis C Screening

	Total	HCV Positive	HCV Negative	OR (95% CI) Univariate	P value	OR (95% CI) Multivariate	P value
	1634	300	1334				
Gender							
Female	698 (42.7%)	90	60	1.0		1.0	
Male	933 (57.1%)	208	725	1.9 (1.5-2.5)	0.3	1.9 (1.4-2.5)	0.7
Transgender	3 (0.2%)	2	1	13.5 (1.2-150.3)	0.06	6.4 (0.4-107.0)	0.3
Baby Boomer							
No	1301 (79.6%)	199	1101	1.0			
Yes	333 (20.4%)	101	232	2.4 (1.8-3.2)	**<0.0001**	2.4 (1.7-3.3)	**<0.0001**
Race							
White	1063 (65.1%)	219	844	1.0			
Black/African American	210 (12.9%)	26	184	0.5 (0.4-0.8)	0.2	0.4 (0.3-0.7)	0.8
Asian	40 (2.4%)	3	37	0.3 (0.1-1.0)	0.6	0.3 (0.1-1.0)	0.6
Native Hawaiian/Pacific Islander	30 (1.8%)	7	23	1.2 (0.5-2.8)	**0.008**	1.0 (0.4-2.5)	**0.03**
American Indian/Alaskan Native	56 (3.4%)	3	53	0.2 (0.1-0.7)	0.2	0.3 (0.1-1.1)	0.7
Multi-Racial	82 (5.0%)	2	80	0.1 (0.02-0.4)	**0.02**	0.09 (0.02-0.4)	**0.02**
Ethnicity							
Non-Hispanic/Latino	914 (55.9%)	168	746	1.0		1.0	
Hispanic/Latino	701 (42.9%)	131	569	1.0 (0.8-1.3)	0.2	0.9(0.7-1.2)	0.4
Unknown	19 (1.2%)	1	18	0.2 (0.02-1.9)	0.2	0.3 (0.04-2.7)	0.3
Insurance Status at Testing							
Uninsured	993 (60.8%)	192	800	1.0		1.0	
Insured	641 (39.2%)	108	533	0.8 (0.6-1.1)	0.2	0.8 (0.6-1.1)	0.2
Education							
< High school	361 (22.1%)	83	278	1.0		1.0	
High school	459 (28.1%)	94	365	0.9 (0.6-1.2)	0.3	0.9 (0.6-1.3)	0.5
Some college	261 (16.0%)	47	214	0.7 (0.5-1.1)	0.8	0.7 (0.5-1.1)	0.4
College/Post graduate	70 (4.3%)	14	56	0.8 (0.4-1.6)	0.7	0.8 (0.4-1.1)	0.9
Unknown	483 (19.6%)	62	420	0.5 (0.3-0.7)	**0.001**	0.7 (0.4-1.1)	0.2

Results

Between 4/23/13 and 6/19/14 we conducted 1,634 rapid tests at 4 clinic sites and 17 alcohol and drug treatment programs. 300 rapid tests (18.4%) were positive. 288 Anti-HCV positive patients had confirmatory viral loads drawn with 214 (74.3%) positive and 74 (25.7%) undetectable. Of the 300 Anti-HCV positive patients, 208 (69.3%) were male and 101 (33.7%) fell within the 'baby boomer' 1945-1965 birth cohort. Baby boomers were significantly more likely to test positive than non-baby boomers (101 of 333 or 30.3% vs. 199 of 1300 or 15.3%, p <0.0001. 258 of those HCV + (86%) disclosed a prior history of injection drug use with 167 (55.7%) endorsing use within 12 months. The median age was 42 (range 20-72). 108 of 300 (36%) had insurance, and of these 91 (84.3%) were publicly funded. 150 of 214 patients with a positive HCV viral load (70.1%) were linked to care and evaluated by an experienced HCV treater. Frequency of HCV genotypes was similar to published literature except for a higher-than-expected number of GT-3 (15%). Roughly 10% of evaluated patients had an APRI score > 1.5 indicating advanced fibrosis on presentation to care. 38 of 81 patients (46.9%) who had a Rheumatoid Factor measured had positive results. Only 10 patients have obtained DAA-based therapy. To date 6 have achieved an SVR12 and 4 are on therapy or awaiting results. No patients have experienced virologic breakthrough or relapse. Many more are in care and awaiting payer approval for treatment.

Table2 – APRI Distribution (n=139)

APRI score	N	%
<0.49	71	51.0%
0.5-1.49	55	39.5%
>1.5	13	9.3%

Figure 3 – Genotype Distribution (n=73)

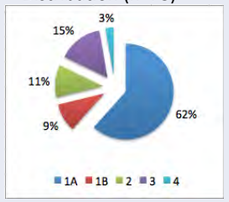


Figure 4 – Rates of + HCV rapid tests by site

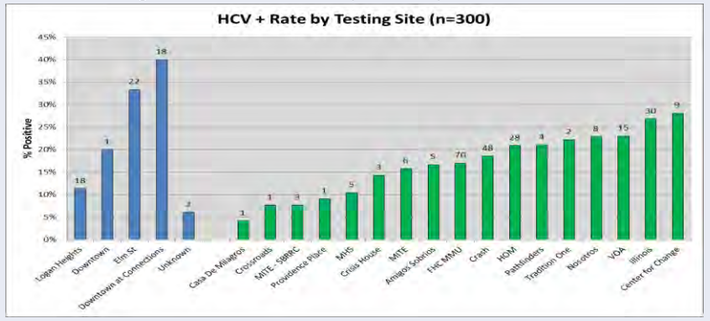
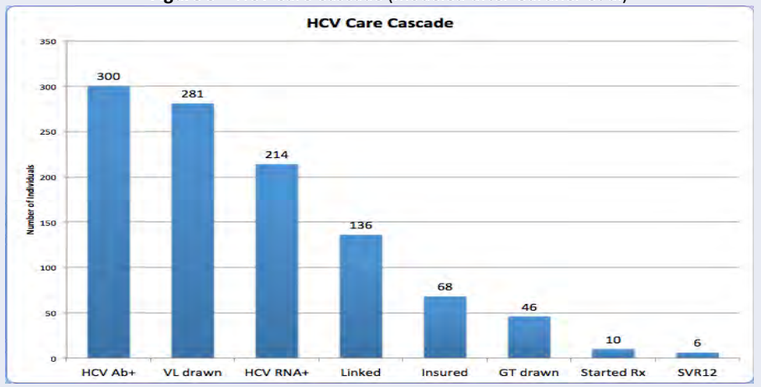


Figure 5 – HCV Care Cascade (modeled after Gardner et al)



Conclusions

This demonstration project reports a high seroprevalence of HCV in urban community health centers and alcohol and drug rehabilitation centers. Only 36% of all Anti-HCV positive patients had insurance at the time of testing, and even those with insurance faced many barriers to accessing treatment. Despite robust outreach, testing, and linkage to care, uptake and coverage of HCV therapy in this largely poor, underserved, publicly-funded cohort remained low.

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