Combatting Blood-Borne Viral Syndemics: Automated Screening of HBV, HCV, HDV and HIV

Abstract 1692 WED-433

Su Wang, MD MPH FACP¹, Ruth Brogden, MPH¹, Jaymie Yango, MBA¹, Aryana Velez, BS¹, Binghong Xu, MD¹, Ammie Patel, PharmD², Eric Handler, DO³,

Christopher Crean, MD⁴, Mityanand Ramnarine, MD⁵, Lauren Trattner, DO⁵, Stephen O'Mahony, MD⁶

1. Center for Asian Health & Liver Center, Cooperman Barnabas Medical Center; 2. Corporate Pharmacy, Cooperman Barnabas Medical Center; 4. Emergency Department, Somerset Medical Center; 5. Emergency Department, Rahway Hospital; 6. RWJBarnabas Health

BACKGROUND

- Achieving hepatitis B (HBV) and C (HCV) elimination will require integration into health care systems as part of routine care.
- A syndemic approach is needed for blood-borne viruses (BBV) which have a significant global burden and include HBV (254M), HCV (50M), HDV (12M)¹ & HIV (39M)².
- Establishing HBV reflex testing to HDV testing protocols is one way to increase testing.
- Reflex testing has been shown to be effective at confirming infections without extra visits
- Cooperman Barnabas Medical Center (CBMC), New Jersey is a 597-bed community hospital with an Emergency Department (ED) of 100,000 yearly visits.
- An electronic medical record (EMR) based automated screening algorithm was implemented to scale up HCV, HBV, HDV & HIV screening and linkage to care (LTC).

ED or Inpatient

- Registration launches automated algorithm
- If eligible → order automatically placed
- Nursing receives alerts w/ positive result

Patient Navigator

- Positive result → real-time
- Educate patient & provide LTC
- Work with PCP to follow patients

Internal Medicine Practice

■ HBV ordered ● Prevalence

- Evaluate patients and determine care plan
- Pharmacist: approvals & delivery of meds

Close f/u



- Patients w HBV-endemic Country of Birth (COB)→ HBsAg test
- Patients born 1945-1965 (Baby Boomers) → HCV Ab w reflex test
- Expand screening eligibility criteria to capture more at-risk
- Patient's race (Asian or Pacific Islander) regardless of COB → HBV test
- Urine/serum toxicology or peer recovery consult ordered → HBV & HCV test
- Expand screening location and implement universal screening
- Expand automated Hepatitis B/C screening to inpatient floors
- Expand automated Hepatitis C screening to universal screening
- At- risk HIV screening automated in the ED
- Orders administered for Narcan, peer recovery specialist consult, urine/serum toxicology, or sexually transmitted infection, as well as VH+ diagnosis

Implement HDV Ab reflex testing from all positive HBsAg tests

CONCLUSION

RESULTS

14000 13230

Figure 1. Screening & Linkage Results Figure 2. HDV Reflex Test

	Tested	Preval	Adj LTC	Pil
HBsAg + 3/2018-3/2024	50,816	0.9% (430)	84.9%	HE
HCV RNA + 1/2020-3/2024	115,948	0.4% (448)	84.8%	нс
HDV Ab + 8/2022-8/2023	56	5.4% (3)	66.7%	
HIV 1/2 Ab + 3/2021-10/2023	7892	1.5% (121)	96.7%	

Figure 5. HBV Screening & Prevalence - Country of Birth

C	Pilot	8/2022-8/2023	No.
	HBV	HBsAg tested	10022
		HBsAg +	63
			(0.6%)
	HDV	HDV Ab tested	56
		HDV Ab +	3
			(5.4%)
		HDV RNA tested	1
		HDV RNA +	0

CBMC HBV Screening Numbers and Prevalence, by Country of Birth

3/2018 - 3/2024

Figure 3. Universal HCV Screening &

Prevalence - Age at tested distribution. US Baby boomers transitioned from 56-74 to 60-78 years old.

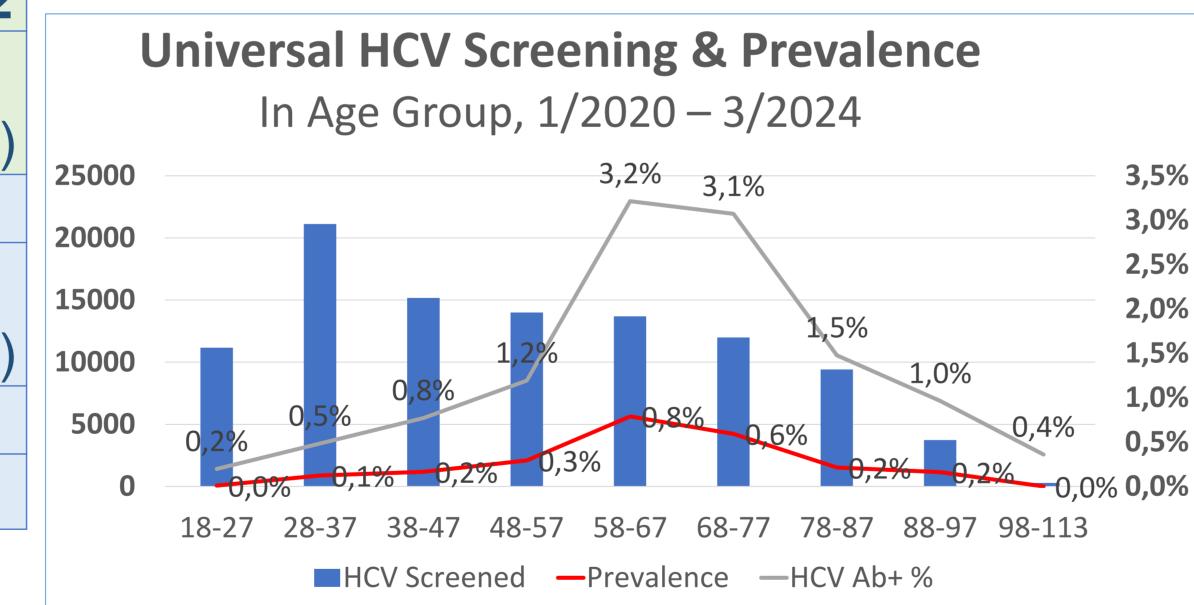
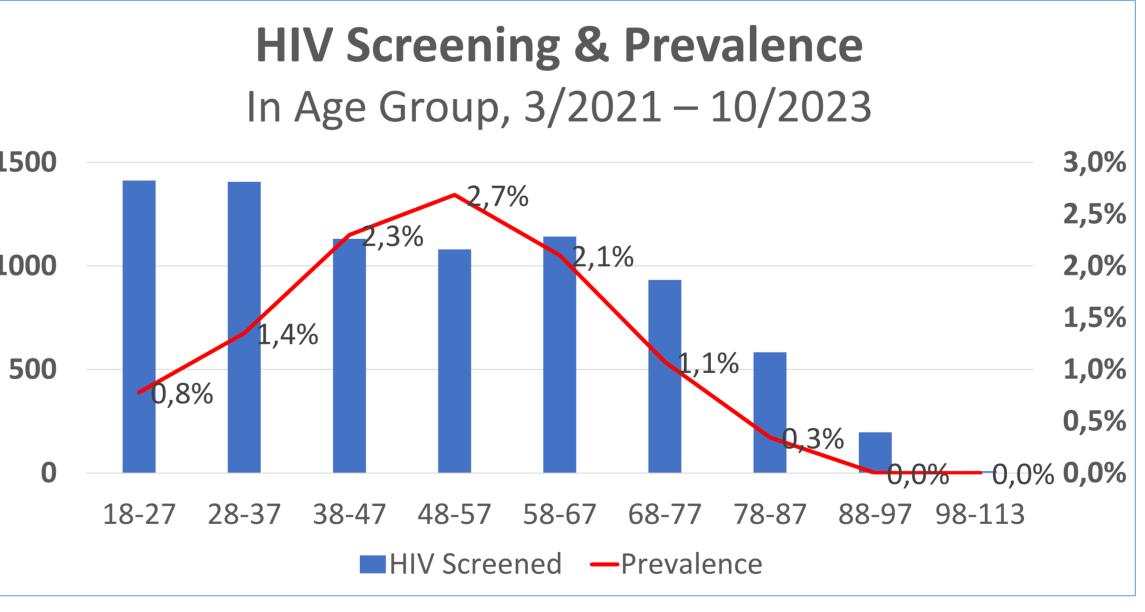
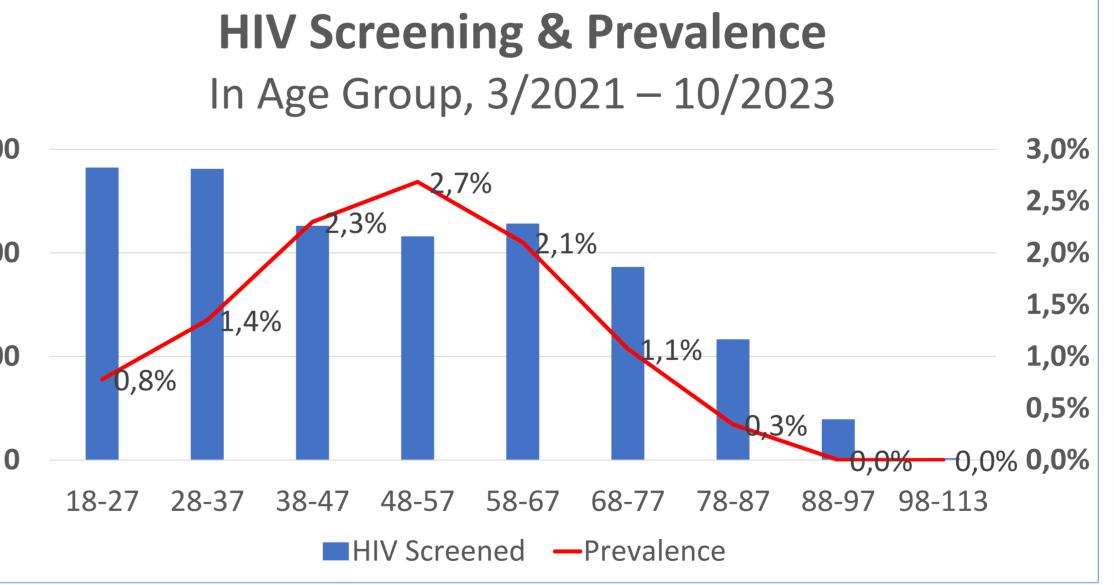


Figure 4. HIV Screening & Prevalence

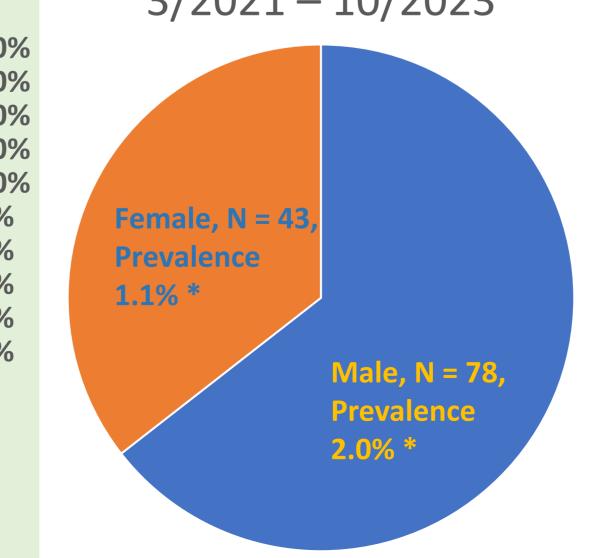
- Age & Gender Distribution



2020



HIV Gender Distribution 3/2021 - 10/2023



*Chi-Sq, p < 0.05.

- Automating EMR based screening for HBV, HCV, HIV and HDV can be a successful approach to integrating and scaling up BBV screening
- A pilot reflex HDV testing algorithm was effective for HDV Ab tests, but obtaining manual HDV RNA testing for HDV Ab+ was not as successful. This emphasizes the need for double reflex HDV testing.
- Integrating automated EMR testing across BBV will be critical to reducing liver cancer rates and addressing the public health burden of syndemics.

REFERENCES

- . WHO Global Hepatitis Report 2024: action for access in low- and middle-income countries.
- https://www.who.int/publications/i/item/9789240091672 2. WHO The Global Health Observatory. HIV. HIV (who.int)

ACKNOWLEDGMENT

This program is partially funded by the FOCUS grant from Gilead Sciences, Inc. Gilead FOCUS funding supports HCV, HBV & HIV screening and linkage to the first medical appointment after diagnosis; FOCUS funding is agnostic to how FOCUS partners handle subsequent patient care and treatment.

Contact Information: Su Wang Su.Wang@rwjbh.org













in a Community Based Hospital

METHOD

HIV Tested, Male 3983, Female 3909.