

# Combating Blood-Borne Viral Syndemics: Automated Screening of HBV, HCV, HDV and HIV in a Community Based Hospital

Abstract 1692  
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## 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)<sup>1</sup> & HIV (39M)<sup>2</sup>.
- 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).**

## RESULTS

Figure 1. Screening & Linkage Results

	Tested	Preval	Adj LTC
HBsAg + 3/2018-3/2024	50,816	0.9% (430)	84.9%
HCV RNA + 1/2020-3/2024	115,948	0.4% (448)	84.8%
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 2. HDV Reflex Test

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

Figure 3. Universal HCV Screening & Prevalence - Age at tested distribution. US Baby boomers transitioned from 56-74 to 60-78 years old.

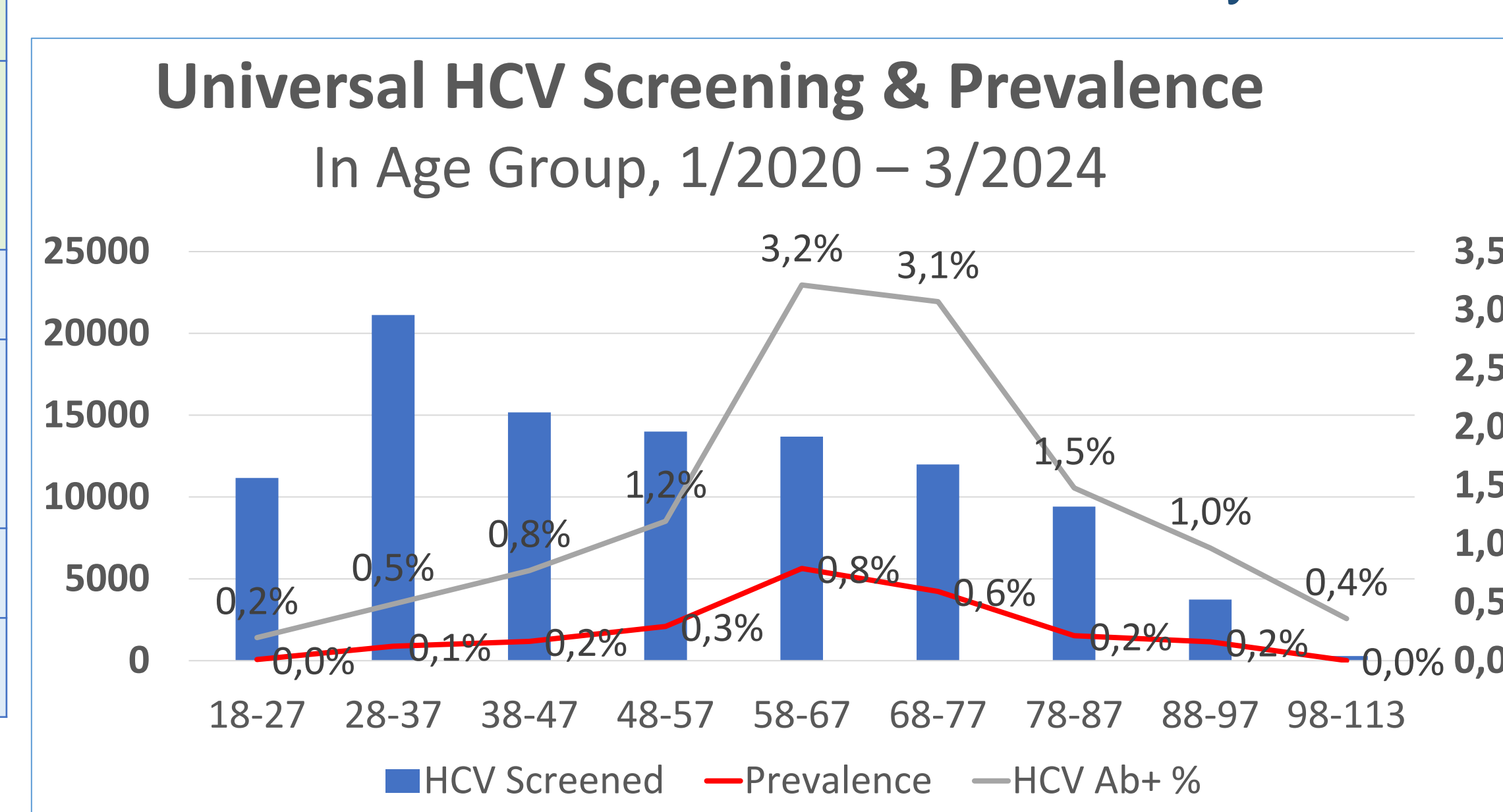


Figure 4. HIV Screening & Prevalence - Age & Gender Distribution

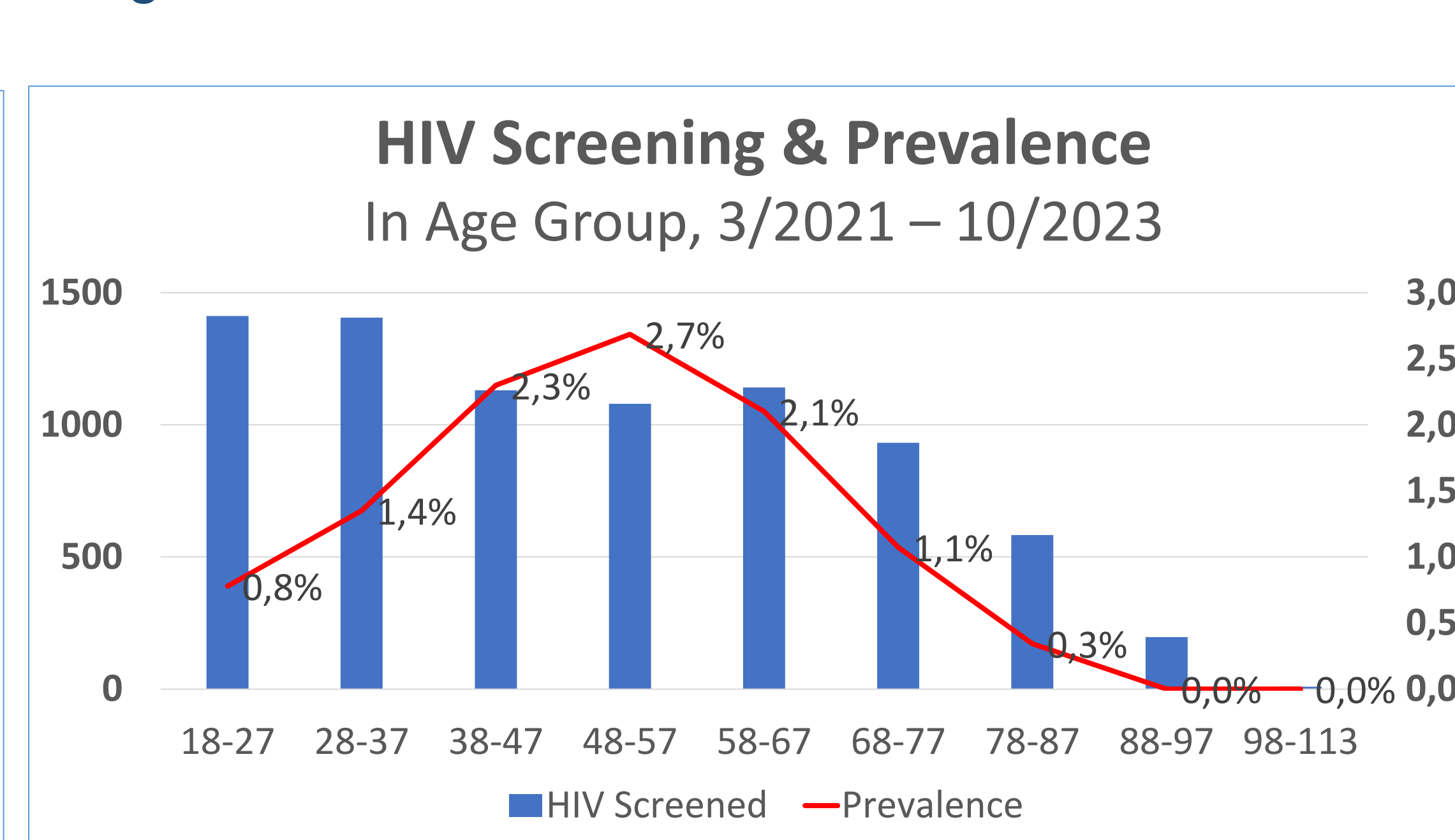
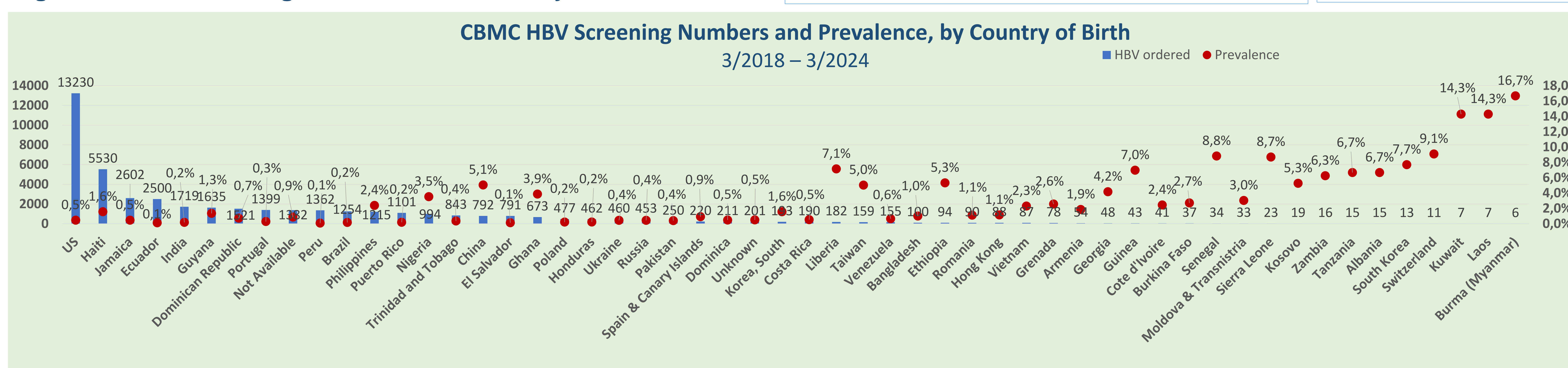


Figure 5. HBV Screening & Prevalence - Country of Birth



## CONCLUSION

- 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>
- WHO The Global Health Observatory. HIV. [HIV \(who.int\)](https://www.who.int)

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