

# Hepatitis B in South Florida



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# Financial Relationships/ Commercial Interests



- Advisory Committee for the Hepatitis B Foundation Liver Cancer Disparities Project

# Goals of the Presentation

- Explain the epidemiology of HBV-related hepatocellular carcinoma in South Florida
- Present results from two community-based HBV projects
- Discuss plans for future community-based HBV screening and educational efforts.

# Chief Complaint: Abdominal Pain

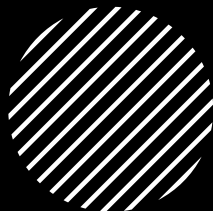
- 42 year-old Haitian man was in his usual state of health until he developed fever.
- The fever persisted and he had abdominal pain. He was note to have a large liver mass (7 cm in size).
- One month later, CT scan with contrast found a 13 cm mass concerning for cancer.
- Risk Factors:
  - Never had a blood transfusion, surgery or tattoos.
  - Denies using intravenous drugs or intranasal cocaine.
  - He has never been tested for viral hepatitis



# Family History:



- His father died of liver cancer 14 years prior
  - Diagnosed when he was in his 70s.
- At one point, the patient was told to wear gloves when caring for his father.
- He does recall receiving the hepatitis B vaccines before emigrating to the US from Haiti.
- He has children, ages 9 and 13, who were born in the US. They are healthy with no hepatitis B.
- His wife was likely tested during pregnancy, but he is unsure of the results.



# Treatment Course (2016):

- Y-90 could not be performed due to shunt fraction of 30%
- TACE to right hepatic artery
- Portal vein embolization to attempt to grow left lobe for resection
  - Left lobe did not grow and tumor progressed to invade the portal vein
- Patient declined Sorafenib
- Inquired about clinical trial here and at Moffitt but did not qualify
- Transitioned to Hospice and died 10 months after diagnosis

# Hepatitis B is highly relevant in our catchment area

- Intermediate Endemicity: 2-7% HbsAg Prevalence
- High Endemicity ≥ 8 % HbsAg Prevalence

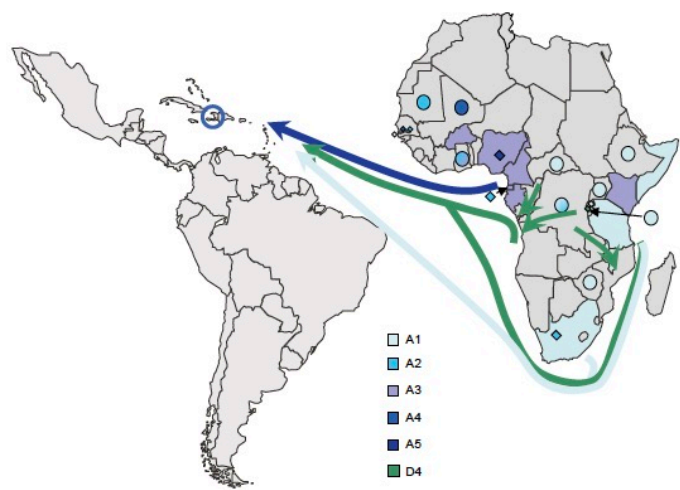


Figure 3. Distribution of hepatitis B virus A subgenotypes and D4 (only in Rwanda) in Africa and their potential routes of spread toward Haiti (color-coded arrows). Colored dots indicate African countries with ≤10 A strains available; full color indicates countries with >90% dominance of 1 subgenotype; or a 60%–90% predominance of 1 subgenotype, with minority subgenotypes shown as diamonds. Subgenotypes other than A1 and D4 are not shown for Rwanda. Sequences included were obtained from GenBank and unpublished data.

Schweitzer A et al. *Lancet*. 2015  
 Andernach IE et al. *Emerg Infect Diseases*. 2009

	Number of studies	Number of participants	Prevalence estimates (%, 95% CI)	Population size per country	HBsAg-positive population
Argentina	11	3 549 199	0.77% (0.77–0.78)	40 374 224	312 806
Barbados	1	500	1.40% (0.67–2.91)	280 396	3926
Belize	5	2231	4.71% (3.90–5.67)	308 595	14 524
Bolivia	4	1357	0.44% (0.20–0.98)	10 156 601	44 908
Brazil	108	3 898 502	0.65% (0.65–0.66)	195 210 154	1 275 813
Canada	25	498 814	0.76% (0.74–0.79)	34 126 240	260 865
Chile	2	1179	0.68% (0.34–1.35)	17 150 760	116 375
Colombia	5	3794	2.29% (1.86–2.82)	46 444 798	1 065 023
Costa Rica	2	7262	0.62% (0.46–0.83)	4 669 685	28 936
Cuba	1	538	1.30% (0.62–2.70)	11 281 768	146 789
Dominican Republic	1	489	4.09% (2.65–6.25)	10 016 797	409 685
Ecuador	1	500	2.00% (1.08–3.68)	15 001 072	300 021
Guatemala	1	12 668	0.22% (0.15–0.32)	14 341 576	31 699
Haiti	2	155	13.55% (9.00–19.89)	9 896 400	1 340 803
Jamaica	3	825	3.76% (2.65–5.29)	2 741 485	103 013
Mexico	32	787 039	0.20% (0.19–0.21)	117 886 404	237 858
Nicaragua	2	1452	0.55% (0.28–1.10)	5 822 209	32 078
Panama	3	6493	1.68% (1.39–2.02)	3 678 128	61 746
Peru	18	18 213	2.10% (1.90–2.32)	29 262 830	615 366
Suriname	2	1253	3.91% (2.97–5.14)	524 960	20 529
USA*	4	112 505	0.27% (0.24–0.30)	312 247 116	843 724
Venezuela	15	138 249	0.48% (0.44–0.52)	29 043 283	139 283
Total	248	9 043 217	0.81% (0.81–0.81)	937 089 925	7 622 334

Countries in Region of the Americas where no eligible reports on HBV reporting HBsAg were available were: Antigua and Barbuda, The Bahamas, Dominica, El Salvador, Grenada, Guyana, Honduras, Paraguay, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Trinidad and Tobago, and Uruguay. \*Of the 420 articles for the USA that were full text reviewed, four entailed original NHANES data for HBsAg and fulfilled the eligibility criteria of this systematic review and were hence included.

**Table 2: HBsAg seroprevalence and the number of people living with chronic HBV in the general population in the WHO Region of the Americas**

Etiology	Percentage
HCV	46%
HBV	8%
HCV-AID	15%
AID	7%
NAFLD	10%
PSC	1%
AIV	1%
FBC	1%
OTHER	11%
HBV-HV	1%
HBV-HCV	<1%
HBV-AID	1%
HBV-AID-HCV	<1%
HBV-HCV	1%
HCV-HV	2%

## Retrospective Analysis of 901 patients with HCC treated from 2004-2014

Jones PD et al. *Dig Dis Sci*. 2018 Feb; 63(2):515-528. doi: 10.1007/s10620-017-4869-3. Epub 2017 Dec 23. PMID: 29275448

# What did we learn?



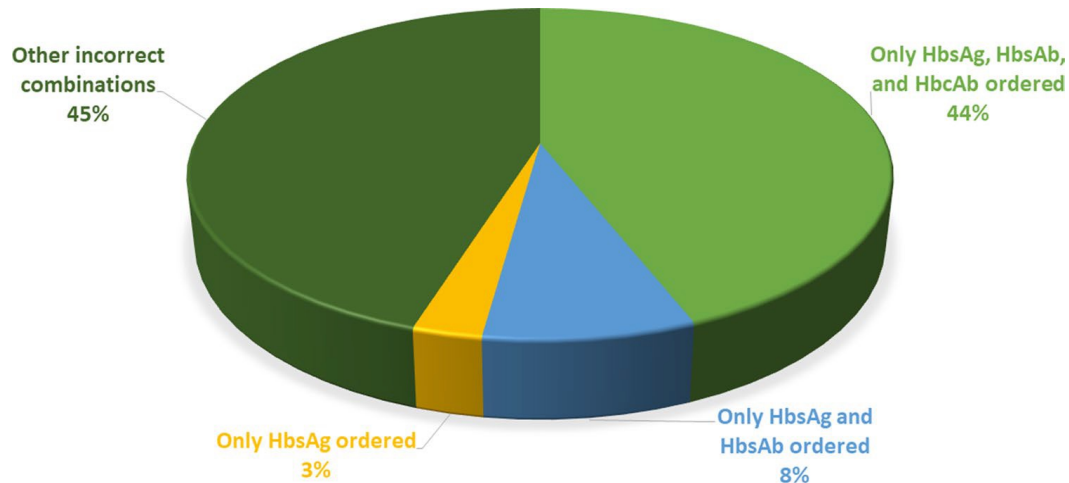
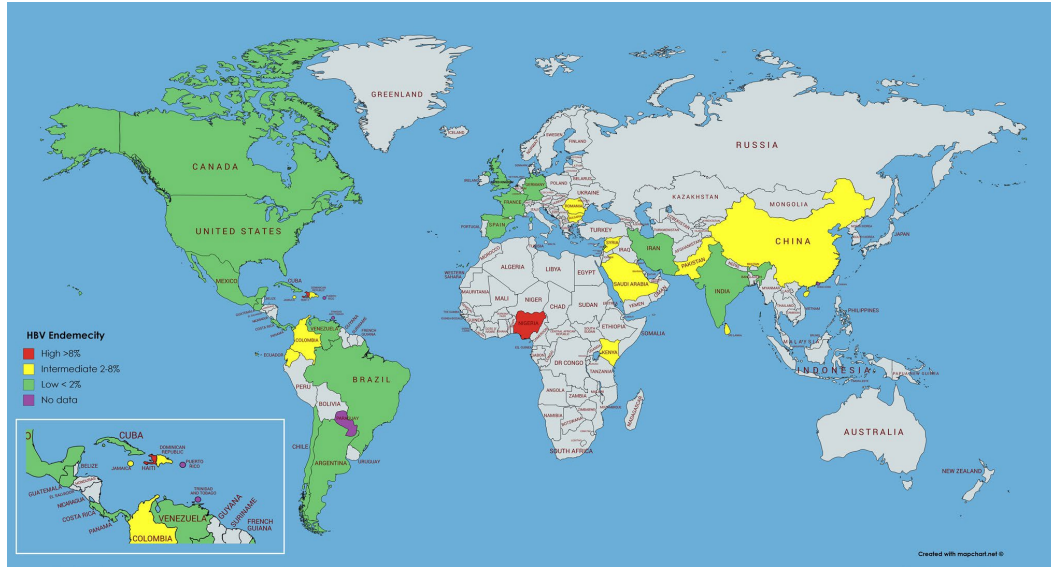
- South Florida presents a unique population for study. In our sample, Hispanics were born in twenty-three and Blacks in seventeen different countries.
- Patients born in the Caribbean had a 39% higher rate of death after HCC diagnosis, when compared to those born in North America,  $p < 0.01$ .
- Haitian Blacks lived only 173 days compared to US-born Blacks, 521 days, and other Blacks, 523 days,  $p = 0.02$ .

# Questions

1. Do healthcare providers know and understand risk factors for hepatitis B?
2. Are healthcare providers screening patients at risk for HBV?
3. Are healthcare providers screening HBV patients at risk for HCC?
4. Are people in the community aware of their HBV risk?



# Do healthcare providers know and understand risk factors for HBV?

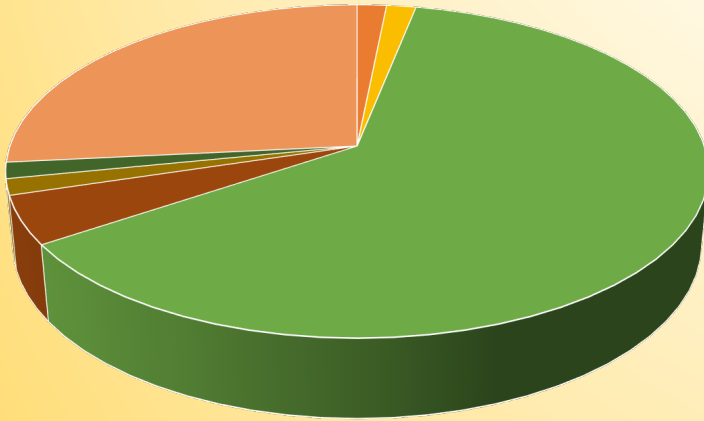


#### Abbreviations:

HbsAg = hepatitis B surface antigen, HbsAb = hepatitis B surface antibody, HbcAb = hepatitis B core antibody

- We surveyed 183 trainees
  - 35% Hispanic, 29% White, 18% Asian, and 9% Black
  - Internal Medicine, 71%; Family Medicine, 11%; Infectious Diseases, 6%; and Gastroenterology, 7%.
- Only 59% correctly estimated national HBV prevalence.
- In vignettes with behavioral risk factors, trainees correctly advised screening, 63–96%.
- When the risk factor was the birthplace, correct responses ranged from 33 to 53%.
- Overall, 45% chose an incorrect combination of HBV screening tests.

# Are healthcare providers screening patients at risk for HBV?



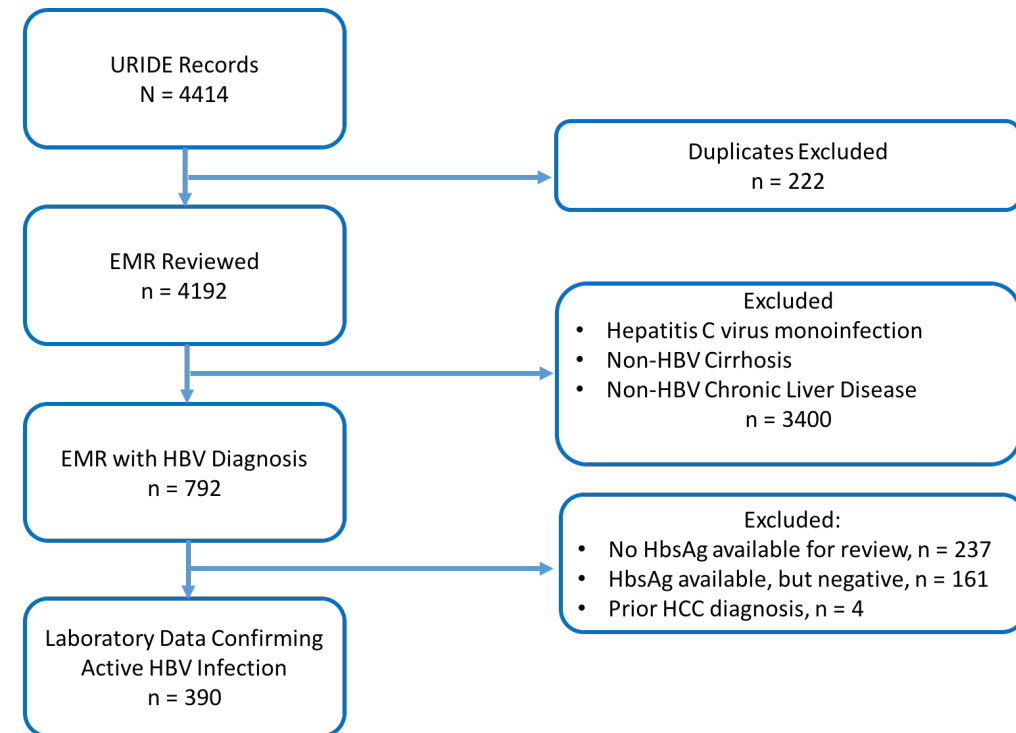
Dom Rep England Haiti Jamaica Nigeria Trinidad United States

**Documented Birthplace on Review of  
the Medical Record**

- Using research informatics, we identified Black patients with at least two physical examinations from 1/1/2011-5/18/2016.
  - We included patients living in zip codes with the largest Haitian populations in our catchment area.
- We identified 301 potentially eligible subjects.
  - We determined that 46.5% of the sample was likely Haitian by search of the medical record.
- Only 27.9% had hepatitis B surface antigen (HBsAg) performed
  - 2.6% of those tested were seropositive.
- 32.5% of patients who were definitely Haitian were tested compared to 30.2% of those likely Haitian, 24.6% of those for whom Haitian nationality could not be confirmed, and 28.6% of those who were definitely not Haitian.

# Are healthcare providers screening HBV patients at risk for HCC?

- The sample was 30.5% Black, 21.5% non-Hispanic White, 22.1% Hispanic, 20.3% Asian and 5.6% “Other”.
- Over 95% of HBV patients were seen in Hepatology clinic; most had at least four visits.
- Ultrasound was ordered at least once in 87.3% of patients and completed in 87.2% where ordered.
  - In 39.9%, CT scan was ordered at least once with completion rate of 89.3%.
  - In 24.1%, MRI was ordered at least once with completion rate of 87.8%.
- There were no imaging results for 16.1% overall, 6.3% of cirrhosis patients vs. 18.6% of those without cirrhosis,  $p < 0.01$ .
- During the study period, HCC was diagnosed in 4.4%.





Are people in the South Florida Haitian community aware of their HBV risk?

# A Mixed-Methods Approach to Understanding Perceptions of HBV and HCC among ethnically diverse Black communities in South Florida



- We conducted ten focus groups (n = 55) in Creole or English and stratified groups by birthplace (Haiti vs. US), gender and HBV infection.
- Participants completed a baseline questionnaire and the Short Assessment of Health Literacy (SAHL-E).
- There was lack of awareness that HBV and HCC disproportionately affect Blacks.
- Many participants confused HBV with human immunodeficiency virus (HIV) infection.
- Median health literacy was low in all groups, except US-born Black women.

# Additional Results

- As expected, HBV+ participants were more knowledgeable about HBV and HCC.
  - However, many HBV+ participants were unsure of the cause of infection, e.g. modes of transmission.
  - Among HBV+ participants, inadequate education and suboptimal physician-patient communication emerged as themes.
  - Of the 31 potential participants with confirmed HBV who declined participation, eight believed they could not participate because they did not have HBV.
- US-born participants knew more about signs and symptoms of HBV, cirrhosis, and HCC
- Haitian participants more often attributed disease to supernatural causes.
- Participants in each group expressed that fear and mistrust of the medical community combined with denial may lead persons to avoid seeking care for liver disease until it is already advanced.

# Additional Results:



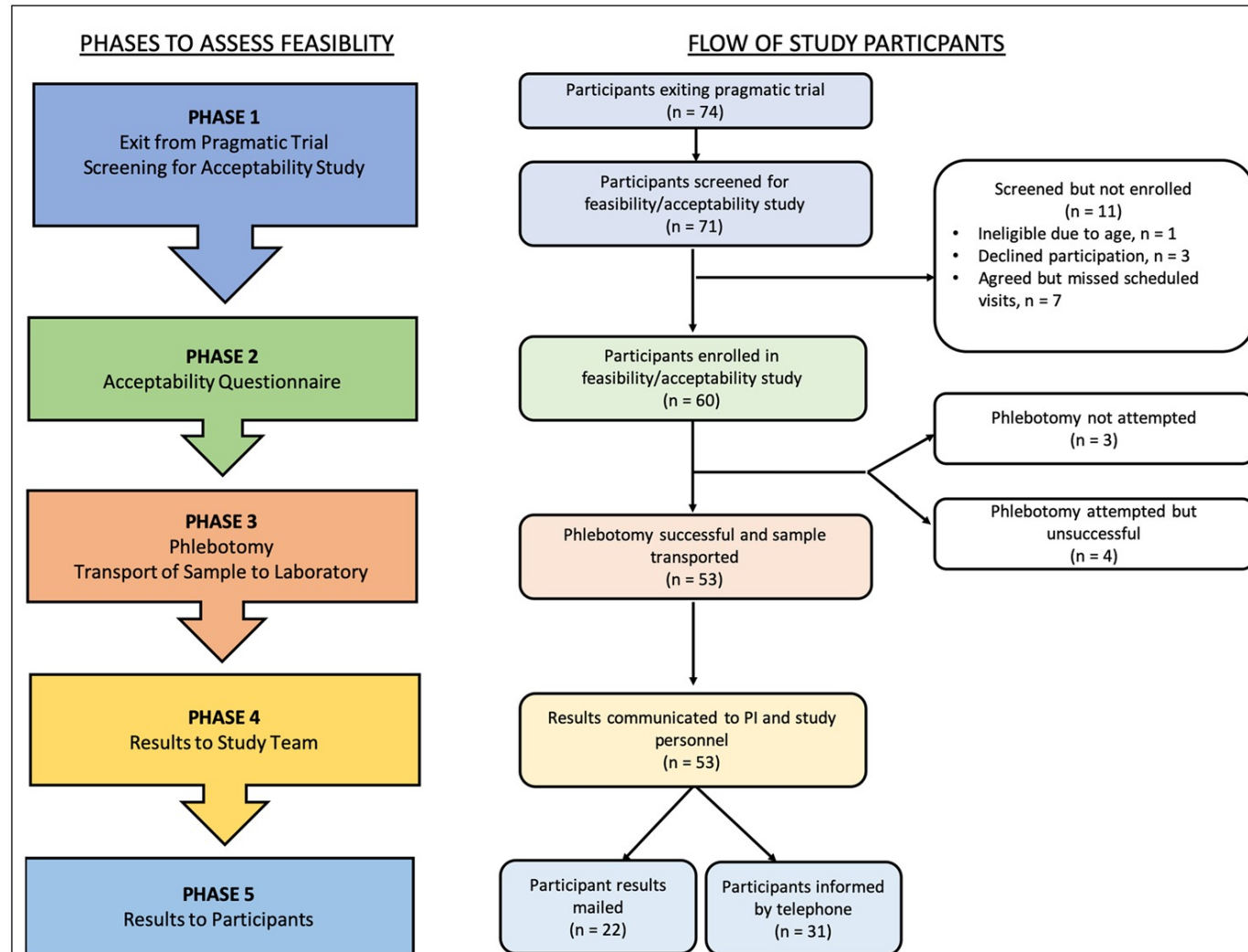
- In both groups, there are misconceptions about HBV transmission and limited knowledge of the link of HBV to HCC.
- Though HBV infection is endemic in Haiti, awareness is low.
- Stigma, limited healthcare access and low health literacy may limit HBV detection, leading to increased HCC incidence.

# Suggestions for Improvement:

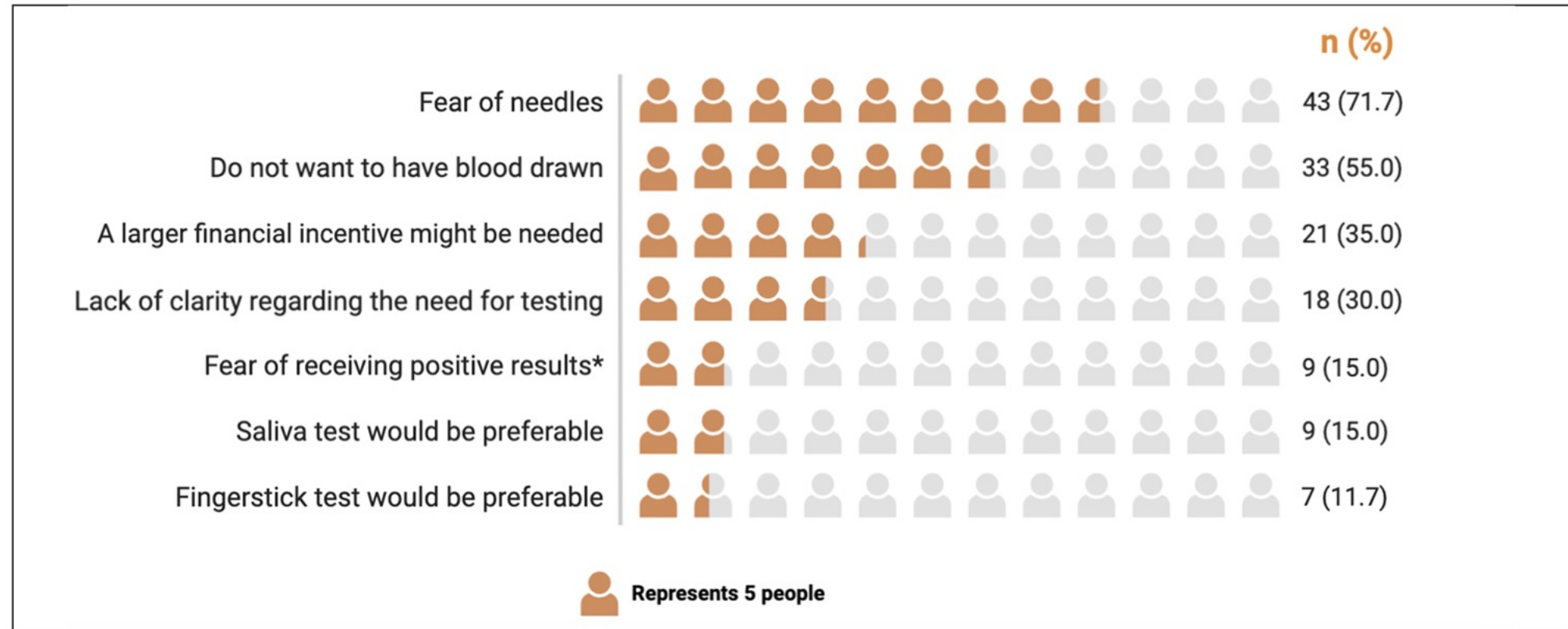


- Leverage existing health fairs, maintaining confidentiality to avoid stigma.
- Community outreach using mobile screening units/teams and home-based screening.
- Educational sessions targeted to various age groups, as young as middle school, could improve overall community knowledge.
- Participants highlighted the importance of a community spokesperson, e.g., pastors, coaches, athletes, or local politicians, to bring visibility and lend credibility to the need for HBV screening

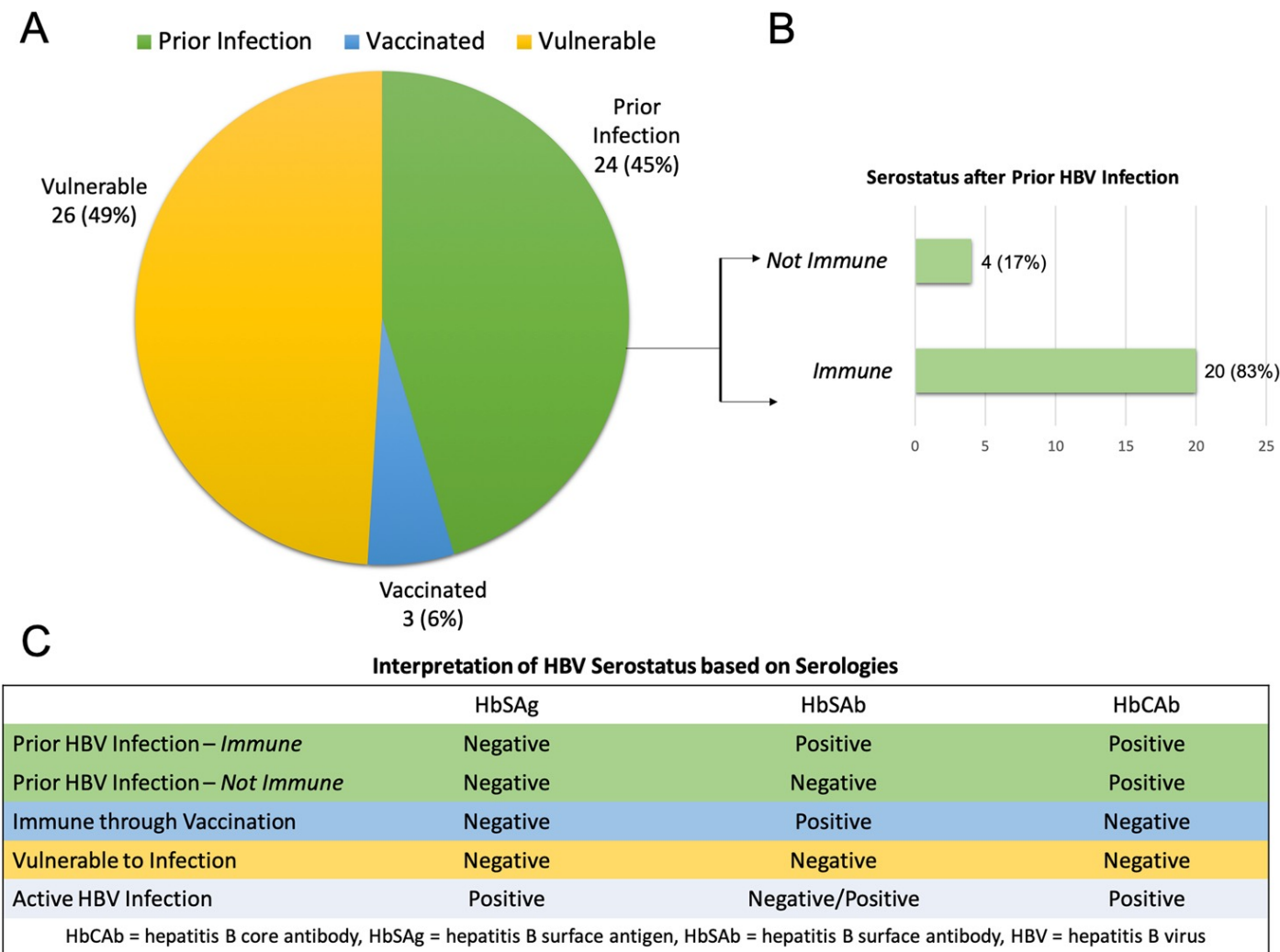
# Acceptability and Feasibility of Home-Based Hepatitis B Screening Among Haitian Immigrants



# Top Reasons Community Members Might Find Home/Community-Based HBV Unacceptable



# Community Members are at High Risk for HBV Infection



Screening is necessary. Screening was feasible. Screening was acceptable.

# Discussion of Next Steps

Scale up community-based efforts.



# Acknowledgements:



## TEAMWORK MAKES THE DREAM WORK

### **Mentors/Co-investigators/Research Assistants**

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*Joselin Soler, Natasha Solle, Kristin Gmunder, Saradjine Batrony*

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**Sylvester Comprehensive Cancer Center Office of Community Outreach and Engagement**