Hepatitis B Screening and Immunization is Critical for Early Clinical Management of HBV Infection for Asian Americans in Ohio

Ranjita Misra Ph.D.[1], Karen Jiobu MA, DLM(ASCP).[2], Johnathan Zhang[3], Qihui Liu[3], Feng Li[3], Robert Kirkpatrick M.D.[4], Jason Ho[3], Payal Kahar[5]

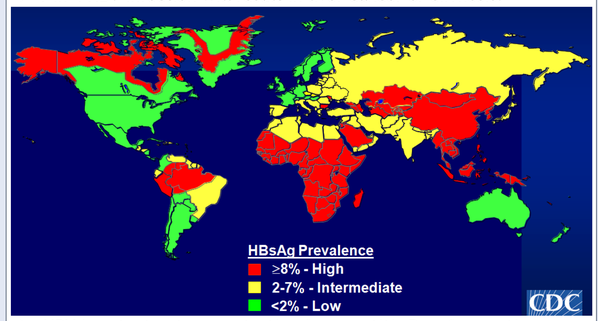
[1]Texas A&M University, College Station, TX, [2]Ohio Asian American Health Coalition, Columbus, OH, [3]The Ohio State University, APAMSA, Columbus, OH, [4]The Ohio State University, Columbus, OH

ABSTRACT

Disproportionately higher rate of chronic Hepatitis B virus (HBV) infection and liver cancer mortality among Asian Americans represent a neglected health disparity. **Hence, the purpose of this study was to (1) examine hepatitis B screening rates among the major Asian American subgroups and (2) improved access to HBV vaccination for high-risk Asian adults through advocacy and policy changes. We** examined knowledge, family history, past screening, current infection and treatment of HBV among a di**verse group of** 1180 Ohioans (85% Asians, 7.5% African American, and 6.5% White) in Franklin county Ohio. **The Asian subgroups comprised of** Chinese, Filipinos, Asian Indians, Pakistanis, Vietnamese, Koreans, Laotians, Indonesian, Japanese, Cambodians, Thai, and Malaysians. Community liaisons and medical students helped in recruiting underserved and hard-to-reach Asians for screenings, survey data collection, and follow-up phone calls. HBV **screening was completed at health fairs, restaurants, churches and temples in the past four years.** Results showed prevalence of chronic HBV was 5.5%. Asians had significantly higher rates of HBV infection (9.5% vs 5%) and family history of liver cancer as compared to other racial ethnic groups (P=.001). Disparity in HBV infection also existed within the Asian community, with Cambodian, Vietnamese and Chinese participants disproportionately infected with the virus than other Asian subgroups (P<.001). Although vaccine eligible Asians were provided vouchers by Columbus Public Health Department to receive free vaccinations, compliance was only 11% in 2008-2009. Follow-up by medical students and community liaisons showed lack of time, low English Proficiency, and fear of side effects was common barriers to compliance. Further, many didn't realize the immunization involved a series of 3 shots. Hence, outreach education using community liaisons for screenings, and vaccination/ treatment is vital for this high risk group. Advocacy and policy changes has resulted in free vaccinations of vaccine eligible Asian adults at the Columbus Public Health Department the establishment of a hepatitis free clinic and for providing culturally and linguistically appropriate treatment for low income Asian Americans in Franklin county.

INTRODUCTION

- Chronic Hepatitis B virus (HBV) infection is an important cause of acute and chronic liver disease globally and in the U.S.
- Chronic HBV affects 2 million Americans-50% are Asian Americans
- 1 in 10 foreign-born Asian Americans have chronic HBV.
- Transmission: infected mother to child, direct contact with infected blood, and unprotected sex.
- 1 in 4 HBV infection will result in liver cancer or cirrhosis.



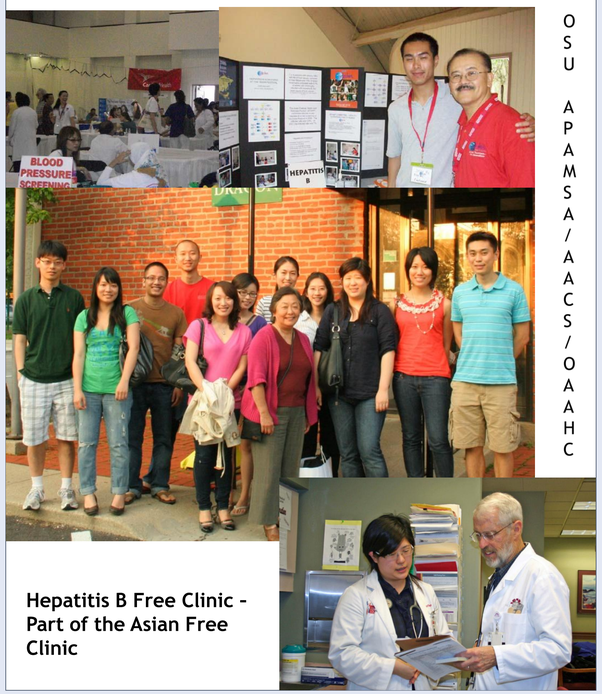
- HBV is detected through testing for hepatitis B surface antigen (HBsAg) and hepatitis B surface antibody (HBsAb).
  - ✓ Immune or protected individuals are HBsAg negative and HBsAb positive.
  - ✓ Vaccine eligible individuals are HBsAg negative and HBsAb negative.
  - ✓ Infected individuals are HBsAg positive and HBsAb negative.

PURPOSE

- Describe the prevalence of chronic HBV infection among 1311 racially diverse adults in Franklin County, Ohio.
- Report barriers to vaccination among vaccine eligible respondents who were provided with vouchers.
- Explain how advocacy and policy expansion have resulted in access to vaccination for eligible Asian adults.
- Describe the establishment of a Hepatitis B Free Clinic to provide follow-up care for uninsured patients.

METHODS

- **Cross-sectional study** in Franklin County (2006-2011).
- **Collaboration:** community based organizations, public health agencies, medical center, and medical student organization.
- **Data collection** survey instrument and serologic testing standardized across sites. Data was collected at various sites: health fairs, restaurants, churches, temples, and public health sites. Participants were recruited by community workers/liaisons.
- **Sample size**: 1311 (86% Asians)
- **Study Procedures**: Combined survey data and lab test data. Used face-to-face interviews/translated materials. Trained blood drawers and used a certified laboratory for testing. Results reviewed by a volunteer physician and results sent by letter or called to the participants (translated materials or interpreter).
- **Demographic information:** age, years lived in US, race/ethnicity, education, income, family history of liver cancer, medical insurance.
- **Statistical Analysis:** Basic statistics; Chi-square tests for prevalence of HBsAg and HBsAb across racial and Asian subgroups; prevalence (%) chronic HBV infection for each racial group/subgroup. Multivariate logistic regression analysis to estimate the Odds Ratio with 95 % confidence intervals(CIs)
- **Prevalence (%)** of chronic HBV infection and risk for being unprotected was obtained by dividing the number of cases with the total number of participants by racial/ethnic subgroups.
- **Multivariate logistic regression analysis** to estimate the Odds Ratio with 95% confidence intervals (CIs) of being chronically infected or being unprotected again HBV



OSU APAMSA/AACS/OAAHC

Hepatitis B Free Clinic - Part of the Asian Free Clinic

RESULTS

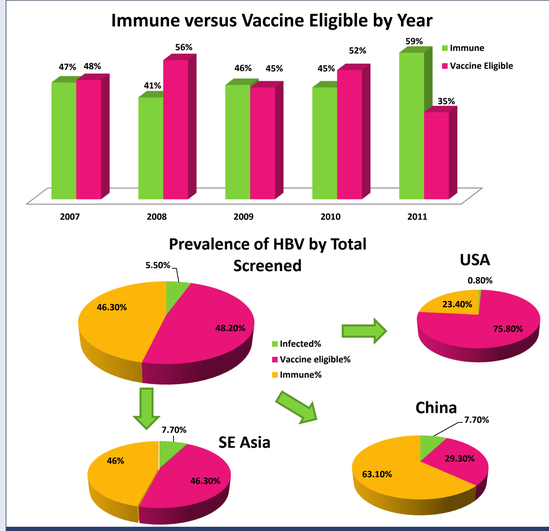
- ✓ Mean age was 50.72 ± 14.55 years ; The majority of participants were Female (57.1%), Asian Americans (86.0%), High School or below(32%) English as a 2nd Language (79.1%).
- ✓ 5.5 % were chronically infected with HBV
- ✓ 1st generation Chinese and South East Asian immigrants higher rates of HBV than the other groups.
- ✓ 4 in 5 chronically infected respondents stated they were never tested, diagnosed or vaccinated against HBV.
- ✓ Participants not chronically infected, about half had no HVB antibodies - susceptible to future infection.

LOGISTIC REGRESSION

Characteristic	HBs Ag-Postive (Infected)		HBs Ag Negative& HBs Ab Negative (Vaccine Eligible)		HBsAg Negative &HBsAb Positive (Immune)	
Age(Years)	**Odds Ratio**	**95% CI**	**Odds Ratio**	**95% CI**	**Odds Ratio**	**95% CI**
<30	1.00	Reference	1.00	Reference	1.00	Reference
30-39	0.53	0.17, 1.62	1.49	0.88, 2.52	0.78	0.47, 1.31
40-49	0.69	0.30, 1.64	1.61	1.03, 2.53	0.69	0.44, 1.07
50-59	0.39	0.15, 0.99	1.66	1.07, 2.58	0.73	0.48, 1.13
60-69	0.81	0.35, 1.88	1.60	1.02, 2.51	0.67	0.43, 1.04
≥70	0.97	0.40, 2.38	1.80	1.10, 3.00	0.56	0.35, 0.92
Sex						
Female	1.00	Reference	1.00	Reference	1.00	Reference
Male	0.85	0.52, 1.37	1.00	0.80, 1.25	1.04	0.83, 1.30
Country at Birth						
USA	1.00	Reference	1.00	Reference	1.00	Reference
China	7.19	1.70, 30.31	4.27	2.86, 6.37	0.18	0.12, 0.27
South Asia§	NC	NC	0.98	0.50, 1.92	1.09	0.56, 2.14
Korea	1.62	0.23, 11.67	5.57	3.29, 9.44	0.18	0.10, 0.30
Japan	5.00	0.43, 58.04	NC	NC	5.67	0.73, 43.85
South East Asia						
Cambodia	*9.44*	*2.05, 43.48*	*3.20*	*1.91, 5.33*	*0.34*	*0.19, 0.61*
Laos	*2.46*	*0.34, 17.84*	*1.53*	*0.83, 2.81*	*0.61*	*0.34, 1.11*
Vietnam	*14.0*	*3.01, 64.637*	*4.84*	*2.73, 8.60*	*0.12*	*0.06, 0.21*
Other SE Asia‡	*3.49*	*0.70, 17.57*	*2.39*	*1.48, 3.84*	*0.38*	*0.24, 0.61*
Other¶	2.43	0.21, 27.53	2.28	1.08, 4.83	0.42	0.20, 0.88
Insurance						
Yes	1.00	Reference	1.00	Reference	1.00	Reference
No	1.13	0.68, 1.87	0.70	0.56, 0.88	1.40	1.11, 1.77
Is English your Primary Language?						
Yes	1.00	Reference	1.00	Reference	1.00	Reference
No	1.91	0.86, 4.29	0.34	0.25, 0.47	2.70	1.95, 3.71

Prevalence of Chronic HBV Infection and Susceptibility

- ✓ Higher rates among Asian participants as compared to African Americans and Whites.
- ✓ Among Asians, participants born in China and SE Asia had higher rates of HBV infection.
- ✓ Participants born in Cambodia and Vietnam had the highest rate of HBV infection (both SE Asia countries).
- ✓ Participants from China, Vietnam, and Cambodia had significantly higher odds of being chronically infected than those who were born in the United States, South Asia, Korea, and other countries.
- ✓ The odds of being immune to hepatitis B decreased significantly with age.
- ✓ There was a weak association between HBV infected/unprotected risk with lack of access to health care, English language proficiency, ever tested and/or vaccinated for HBV.
- ✓ Participants without a family history of HBV infection or were not living with those with HBV infection were less likely to be infected.



DISCUSSION/CONCLUSIONS

- This is the first community based study to compare the disparity in HBV infection among Asian American subgroups, Whites and Blacks in central Ohio.
- Although half of the respondents were vaccine eligible, follow-up vaccinations even with free vouchers was very low.
- Respondents from China and South East Asia had significantly higher rates of HBV infection. Hence, regular screening and vaccination of immigrants from these countries should be part of routine preventative care.
- Advocacy efforts has resulted in free vouchers included in screening results for vaccine eligible Asian adults.

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- Collaboration with medical student and community organizations had lead to improved awareness, screening and immunization.
- A hepatitis free clinic for providing culturally and linguistically appropriate treatment was established in July 2009 as part of the existing Asian Free Clinic. This is staffed with Medical Students and volunteer Hepatologist and Gastroenterologists

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Student Organizations: OSU APAMSA (Asian and Pacific American Medical Student Association

Other Organizations/Agencies: OSU Medical Center Community Development (Wanda Dillard), Ohio Commission of Minority Health, Asian Free Clinic, Hepatitis Free Clinic (Robert Kirkpatrick, MD)