

Maryland Asian American Cancer Program

## Impact of culturally-integrated liver cancer education on hepatitis B knowledge among Asian Americans

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November 8, 2010  
APHA meeting, Denver. CO

### Presenter Disclosures

Hee-Soon Juon, PhD

No relationships to disclose

### Topics to be covered

- At risk population of liver cancer
  - Worldwide and U.S.
- The overview of Asian Americans
- Asian American Liver Cancer Education program
  - Funded by National Cancer Institute (8/2008- 7/2012)
- Discussion

### Hepatocellular Carcinoma (HCC) from a Global Perspective

- Ranks 4<sup>th</sup> in cancer incidence and 3<sup>rd</sup> in cancer mortality
- >80% of HCC occurs in the developing world
- HCC is largely preventable (80% caused by chronic HBV, 15% chronic HCV)
- HBV infection and aflatoxin exposure are important risk factors:

### Worldwide liver cancer incidence and mortality

FIGURE 1. Geographic distribution of chronic hepatitis B virus (HBV) infection — worldwide, 2008\*

- About 1 in 20 people in the world are living with chronic HBV infection
- Without monitoring or treatment, 1 in 4 of those chronically infected will die from liver cancer or liver failure.

\* For multiple countries, estimates of prevalence of hepatitis B surface antigen (HBsAg), a marker of chronic HBV infection, are based on limited data and might not reflect current prevalence in countries that have implemented universal hepatitis B vaccination. In addition, HBV prevalence might vary within countries by subpopulation and locality.  
Source: CDC. National Health and Human Services, CDC, 2008. Available at <http://www.cdc.gov/mmwr/pdf/wk08/mm0808a.pdf>

Source: MMWR/CDC

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### HBV Infection

- 2 billion people worldwide infected.
- >400 million HBV carriers worldwide
- 1.4 million people chronically infected in U.S.
- 46,000 Americans were newly infected with hepatitis B in U.S.
- 1 out of 10 Asian Americans has chronic hepatitis B

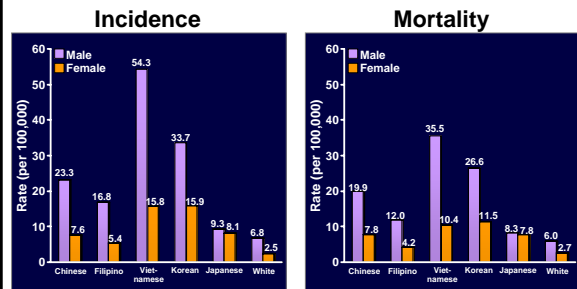
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## HBV and Liver Cancer is the Greatest Health Disparity Between Asian and White Americans<sup>1,2</sup>

Maternal race/ethnicity	2002 Births	Estimated maternal HBsAg Prevalence	Estimated Births to HBsAg positive women
White, non-Hispanic	2,298,156	0.13%	2,988
Hispanic	876,642	0.09%	789
African American	593,691	0.5%	2,968
<b>Asian Pacific Islander Foreign born</b>	<b>175,264</b>	<b>8.9%</b>	<b>15,598</b>
<b>US born</b>	<b>35,643</b>	<b>1.4%</b>	<b>499</b>
Other	42,330	0.5%	212
<b>Total</b>	<b>4,021,726</b>		<b>23,054</b>

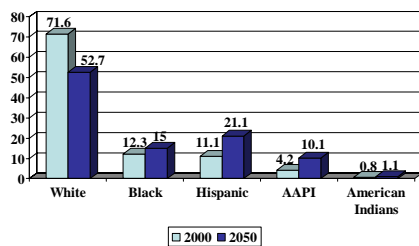
1. Asian Liver center <http://liver.stanford.edu>  
 2. Draft ACP Hepatitis B recommendations, CDC 2005

## Asian-American Age-Adjusted Liver Cancer Rates (California, 2000-2002)



Approximately 3.7 million Asians in California. Cancer data from California Cancer Registry.

## U.S. Population (2000 and 2050)



Source: Census, 2000

## AAPI Kaleidoscope AAPIs are Americans of Asian or Pacific Islander descent

There are 28 Asian and 19 Pacific Islander subgroups representing a vast array of languages and cultures.

Bangladeshi	Indochinese	Pakistani
Bhutanese	Indonesian	Papua New Guinean
Bikini Islander	Iwo-Jiwan	Polynesian
Borneon	Japanese	Ponapean
Burmese	Javanese	Saipanese
Cambodian	Korean	Samoa
Carolinian	Kwajalein Islander	Sikkim
Celebesian	Lacitan	Singaporean
Cerem	Malayan	Solomon Islander
Cernam	Maldavian	Sri Lankan
Chinese	Mariana Islander	Tahitian
Cosmopolitan	Marshall Islander	Taiwanese
Eniwetok Islander	Marshallese	Tarawa Islander
Eurasian	Melanesian	Thai
Fujian	Micronesian	Tinian Islander
Filipino	Mien	Tokelauan
Guamanian	Mongolian	Tongan
Hawaiian	Nepali	Trukese
Hmong	New Hebrides Islander	Vietnamese
Indian	Okinawan	Yapese

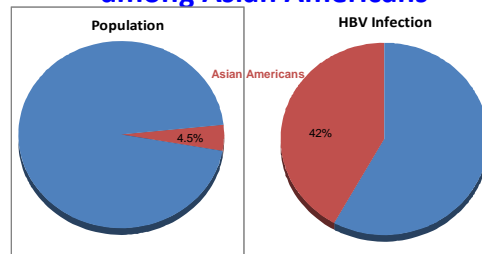
Source: US Census 2000

## Asian Americans in the U.S.

	%	Growth rate from 1990
• Chinese	23.7%	47%
• Filipino	18.1%	31%
• Asian Indian	16.4%	106%
• Vietnamese	11.0%	83%
• Korean	10.5%	35%
• Japanese	7.8%	-6%
• Others	12.5%	64%

Source: Census, 2000

## Health disparity of HBV infection among Asian Americans

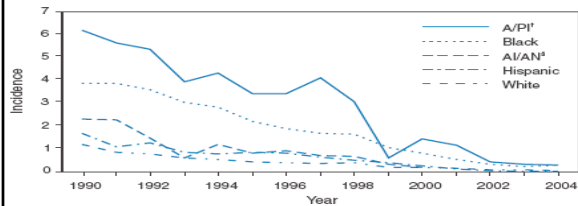


Source:

- Cohen C, Evans AA, London WT, Block J, Conti M, Block T. Underestimation of chronic hepatitis B virus infection in the United States of America. *J Viral Hepat* 2008;15:12-13.
- Stanford University School of Medicine. Asian Liver Center. FAQ about Hepatitis B. <http://liver.stanford.edu/Education/faq.html>. Accessed November 20, 2009.
- U.S. Census Bureau. State & County QuickFacts. <http://quickfacts.census.gov/qld/states/00000.html>. Accessed December 15, 2009.

## HBV and Liver Cancer is the Greatest Health Disparity Between Asian and White Americans

FIGURE 3. Reported acute hepatitis B incidence\* among persons aged <19 years, by race/ethnicity and year — United States, 1990–2004



\* Per 100,000 population.  
† Asian/Pacific Islander.  
‡ American Indian/Alaska Native.

Source: MMWR/CDC

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## National Strategy for preventing new HBV Infection

- Routine screening of pregnant women for HBsAg
- Universal infant hepatitis B immunization since 1991
- Catchup vaccination of unvaccinated children and adolescents
- Recommending Hep B vaccination selectively for high-risk adults including immigrants with endemic areas such as Asian Americans and African immigrants

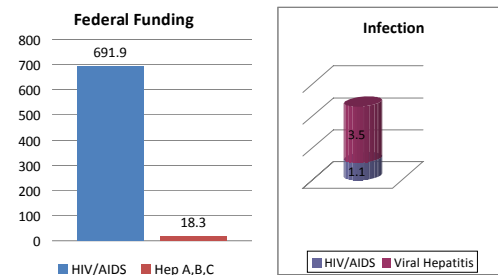
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## IOM Report, 2009

- Lack of knowledge and awareness about chronic viral hepatitis
  - among **at-risk populations**, members of the public, and policy makers
  - On the part of health-care and social-service providers
- Insufficient understanding about the extent and seriousness of this public-health problems
- Inadequate public resources are being allocated to prevention, control, and surveillance programs

Source: IOM (Institute of Medicine), 2010. *Hepatitis and Liver Cancer: A National Strategy for Prevention and Control of Hepatitis B and C*. Washington, DC: The National Academic Press.

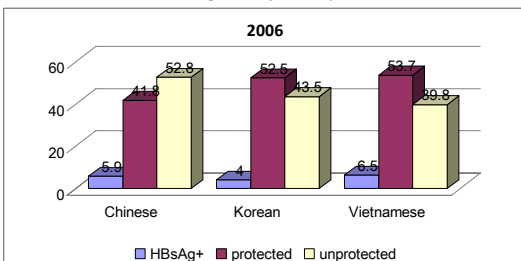
## Federal funding for HIV/AIDS and Viral Hepatitis Infection in the U.S.



Source: National Alliance of State & Territorial AIDS Directors, FY2010 Appropriations for Federal HIV, Hepatitis, and STD Programs. <http://www.nastad.org/docs/PublicResources/2009/2010%20Appropriations%20Chart%20Senate%20Mark.doc>.  
US Centers for Disease Control and Prevention, Viral Hepatitis Topics. <http://www.cdc.gov/hepatitis/Statistics.htm>.  
US Centers for Disease Control and Prevention, HIV/AIDS Statistics and Surveillance. <http://www.cdc.gov/hiv/topics/surveillance/basic.htm>.

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## HBV prevalence of Asian Americans Montgomery, Maryland



Source: 2006 Need assessment Asian American Health Initiative (n=807)

Hsu et al. (2007).

## Specific Aims

1. Develop educational strategies tailored to the needs of target communities to increase public awareness of liver cancer prevention
2. Implement community-based cancer intervention programs
3. Evaluate the effectiveness of the educational intervention on liver cancer awareness and *HBV screening behavior*

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Maryland Asian American Cancer Program

## Community-Based Participatory Research (CBPR)

- Sustainability of the program
- Community Advisory Board
  - 8 to 10 members from Chinese, Korean, and Vietnamese community
  - Meeting twice a year: June & December
  - Feedback for recruitment, educational materials, intervention protocol, communication program, more



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## Phase 1 (Year 1)

- Develop educational strategies tailored to the needs of target communities (e.g., Korean, Chinese, Vietnamese)
  1. Conduct focus group
  2. Develop culturally integrated liver cancer education program
    1. Small group presentation (Power point)
    2. Role play
    3. Photonovels
  4. Provide information on low cost program for screening and vaccinations
  3. Develop questionnaire

## Phase 2 (Year 2 and 3) Study Design (Randomized case control)

On the same day      After 6 months

	Pre-test	Intervention	Immediate posttest	Process evaluation	posttest	Delayed intervention
		Face-to-face		Mailed	Telephone interview	
<b>Intervention</b>	R	O <sub>1</sub>	X	O <sub>2</sub>	O <sub>3</sub>	O <sub>4</sub>
<b>Control</b>	R	O <sub>5</sub>			O <sub>6</sub>	X

## Sampling Frame and Study Sample

Total of N=900 Asian American Adults (18 and older)

- Korean
  - Intervention N=150
  - Control N=150
- Chinese
  - Intervention N=150
  - Control N=150
- Vietnamese
  - Intervention N=150
  - Control N=150

Geographic isolation for intervention and control site

## Recruitment Strategy

- Different recruitment strategy for each group
  - Chinese: Chinese Language Schools; Churches
  - Korean: Church; Grocery stores
  - Vietnamese: Nail salon, church; restaurant, temples

	Chinese	Korean	Vietnamese
Church	1	7	4
Language school	4	N/A	1 temple
others	Hopkins/UMD campus	Grocery stores/restaurant	Restaurant/nail salons/Boat People SOS

## Field Work Summary

- Study period: November 2009 - June 20, 2010
- Survey
- Study participants
  - A total of 877 participated in the project
    - 441 Intervention
    - 436 control
- Reimbursement \$10 gift card

	Chinese	Korean	Vietnamese
Intervention	151	148	142
Control	152	146	138
Total	303	294	280

## Sample characteristics (n=877)

- Age: 45.1 (SD=13.46), 18-89
- Gender: Male 42%; Female 58%
- Ethnicity:
  - Chinese 35%
  - Korean 33%
  - Vietnamese 32%
- Education:
  - less than high school: 13%
  - More than college graduate: 52%
- Employed: 61% currently working
- Family history of HBV infection: 14%

## RESULTS OF IMMEDIATE POSTTEST

## Hepatitis B Knowledge

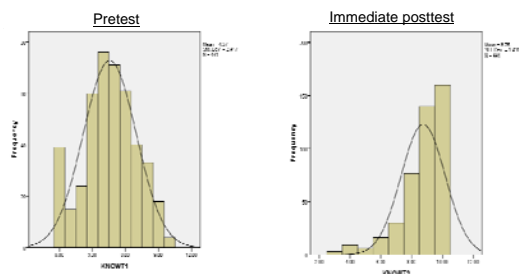
- Pretest/Immediate Posttest
  - Knowledge of transmission mode (10)
  - Sequel of HBV (7)
  - Knowledge of HBV high risk group (7)

## Knowledge: mode of transmission

1. From infected mother to child during childbirth\*
2. By eating food prepared by an infected person
3. By sharing a toothbrush with an infected person\*
4. By sharing food with an infected person
5. By sharing a razor with an infected person\*
6. By eating food that has been pre-chewed by an infected person
7. By being coughed or sneezed by an infected person
8. By having sexual intercourse with an infected person\*
9. By holding hands with an infected person
10. By breast feeding from an infected mother

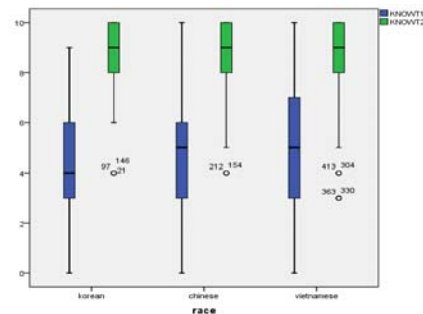
Possible range: 0 to 10

## Knowledge: Mode of transmission (n=441)



Paired sample t-test (33.96, 440df, p<.001)

## Knowledge: Mode of transmission (intervention group only, n=441)

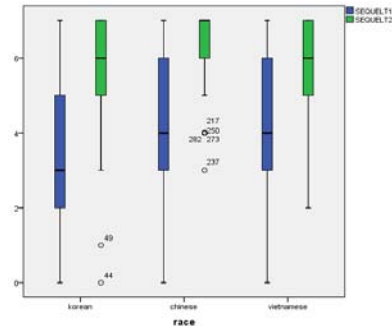


## Knowledge: Sequel of HBV

1. Hepatitis B can cause liver cancer
2. Chronic hepatitis B cause liver cancer and/or cirrhosis if not properly managed
3. People with hepatitis B are infected for life
4. Hepatitis B infection cannot be cured, but the disease can be managed
5. The majority of chronic hepatitis B patients have no symptoms
6. Hepatitis B virus is significantly more contagious than HIV/AIDS
7. A hepatitis B infected person, who looks and feels healthy, can still spread hepatitis B

Possible range (0 to 7)

## Knowledge: Sequel of HBV Intervention group only (n=441)

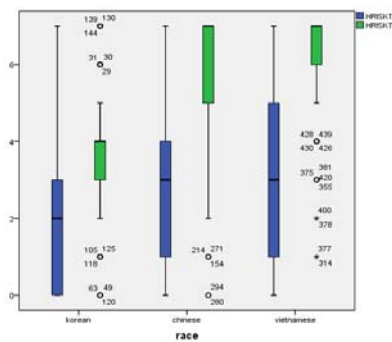


## Knowledge: high risk HBV infection group (intervention group only, n=441)

1. People with multiple sexual partners
2. Previous or current injection drug user
3. Male sexual encounters with other males (homosexual)
4. Previous employee or voluntary worker in hospital
5. Homeless people in shelters
6. Persons in other healthcare facilities
7. Asian American immigrants

Possible range (0 to 7)

## Knowledge: high risk HBV infection group



## Conclusion

- Educational program has increased HBV knowledge and awareness
- Racial differences of Hepatitis B knowledge in pretest
  - Chinese Americans reported highest hepatitis B knowledge followed by Vietnamese Americans.
- Change of knowledge was associated with age and education.
  - Older and less educated individuals will require that special attention for their educational needs for liver cancer prevention and control.

Thank you

