

# **Interventions to Increase Hepatitis B Screening: Results from Controlled Studies with Hmong, Korean, and Vietnamese American Communities**

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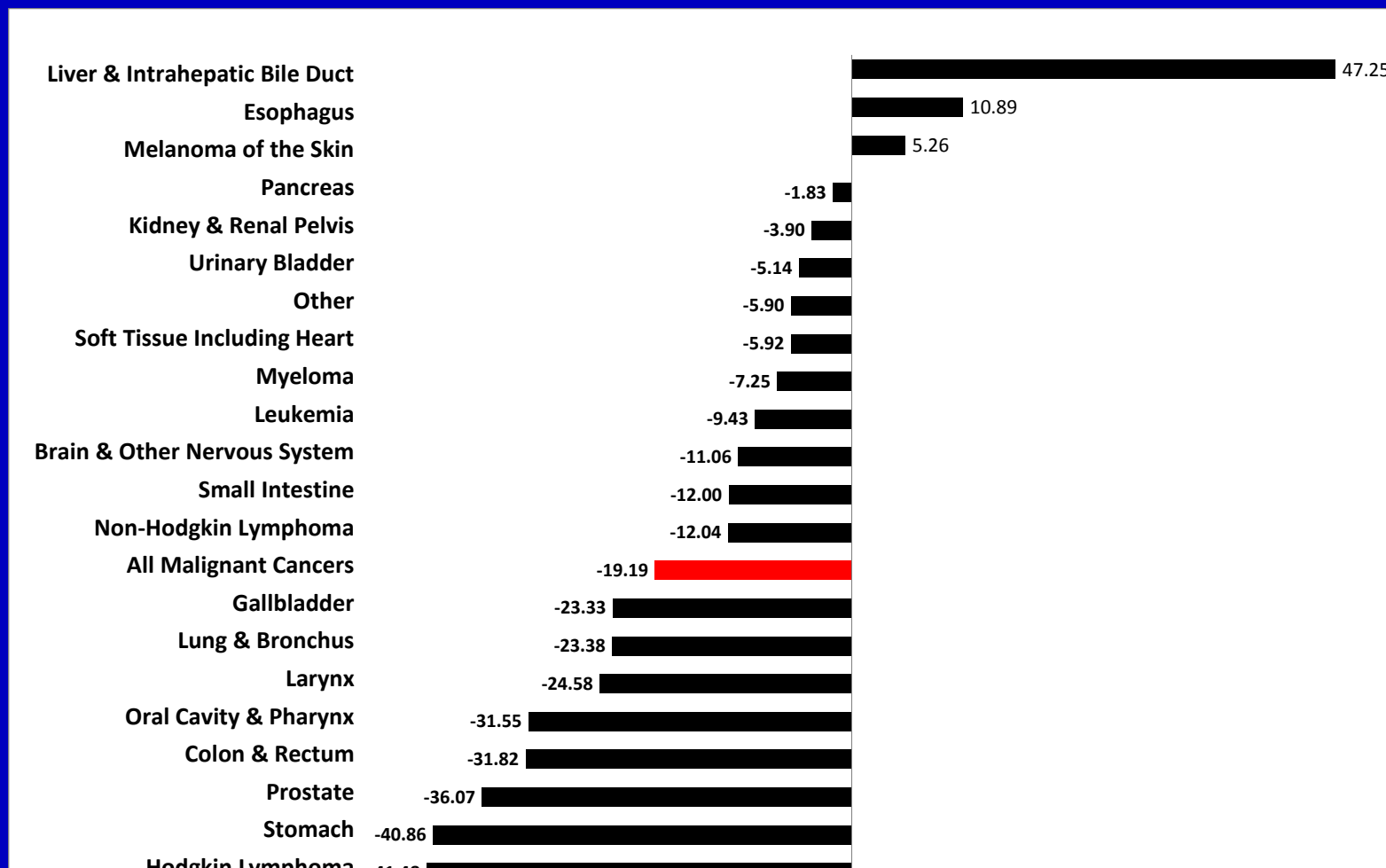
# Asian Americans: 2010

- Population: 17.3 million (5.6% of the U.S.)
- Fastest growing racial/ethnic group: 46% increase from 2000 vs. 9.7% for general population
- Majority are foreign-born
- More Asian Americans live under the poverty level (12%) compared to non-Latino whites (9%)
  - 15% Koreans, 14% Vietnamese, 21% Cambodians, 32% Hmongs

# Hepatitis B

- 350 million infected with hepatitis B worldwide
- Up to 40% get liver cancer, cirrhosis, or other sequelae
- Most common cause (80%) of liver cancer
- Costs for U.S. hospital discharges with a HBV diagnosis increased from \$357 million (1990) to \$1.3 billion (2006)
- IOM and DHHS both have prioritized control of viral hepatitis.

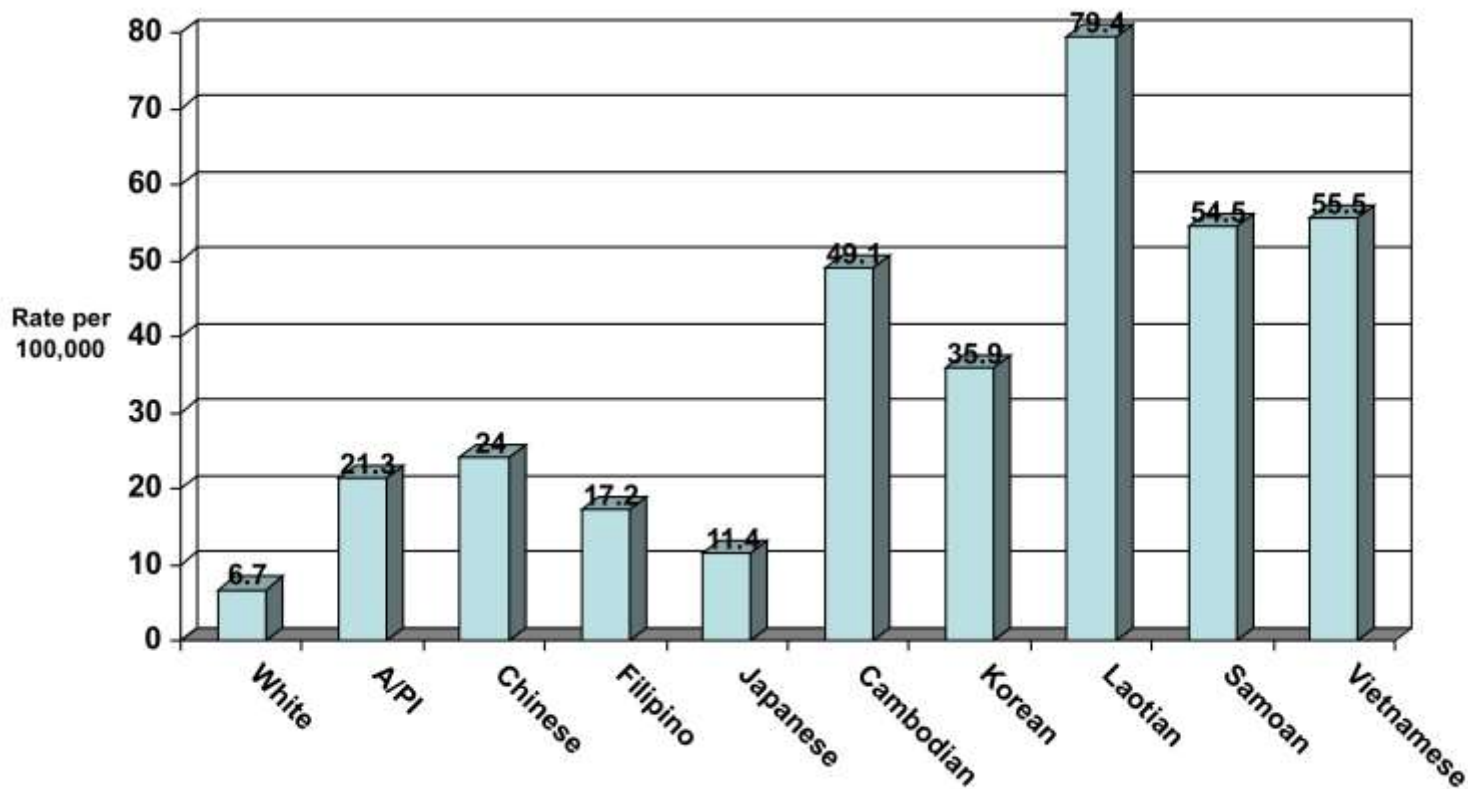
# Change in U.S. Cancer Death Rates 1990-2005, Males



# Hepatitis B

- Majority of the 2.2 million Americans with HBV are Asian.
- Among some Asian American groups, the rate of chronic hepatitis B is ~10-15%.
- More than 1/3 of Asian Americans have never had a hepatitis B test.

# Liver Cancer Incidence, Men 1998-2002



Miller 2008; California Cancer Registries 2008

## **Successful Promotion of Hepatitis B Vaccinations Among Vietnamese-American Children Ages 3 to 18: Results of a Controlled Trial**

Stephen J. McPhee, MD<sup>\*</sup>, Thoa Nguyen<sup>\*</sup>, Gary L. Euler, MPH, DrPH<sup>‡</sup>, Jeremiah Mock, MSc, PhD<sup>\*</sup>, Ching Wong, BS<sup>\*</sup>, Tram Lam, BS<sup>\*</sup>, Walter Nguyen<sup>§</sup>, Sang Nguyen, MSW<sup>§</sup>, Martin Quach Huynh Ha, PhD<sup>¶</sup>, Son T. Do, MD<sup>||</sup>, and Chau Buu, MD<sup>\*\*</sup>

- Quasi-Experimental Study comparing Media Education (ME) in Houston vs. Community Mobilization (CM) in Dallas vs. usual care in Washington, DC
- ME or CM were more effective in increasing:
  - Parents' hepatitis B knowledge
  - Vaccinations among children ages 3-18
    - ME +10.9%, CM +12.2%
  - Vaccinations among those ages 15-18
    - ME +13.3%, CM +7.0%

# Community-Based Interventions to Promote Hepatitis B Testing

Liver Cancer Control for Asian Americans

NCI P01CA109091-04A1





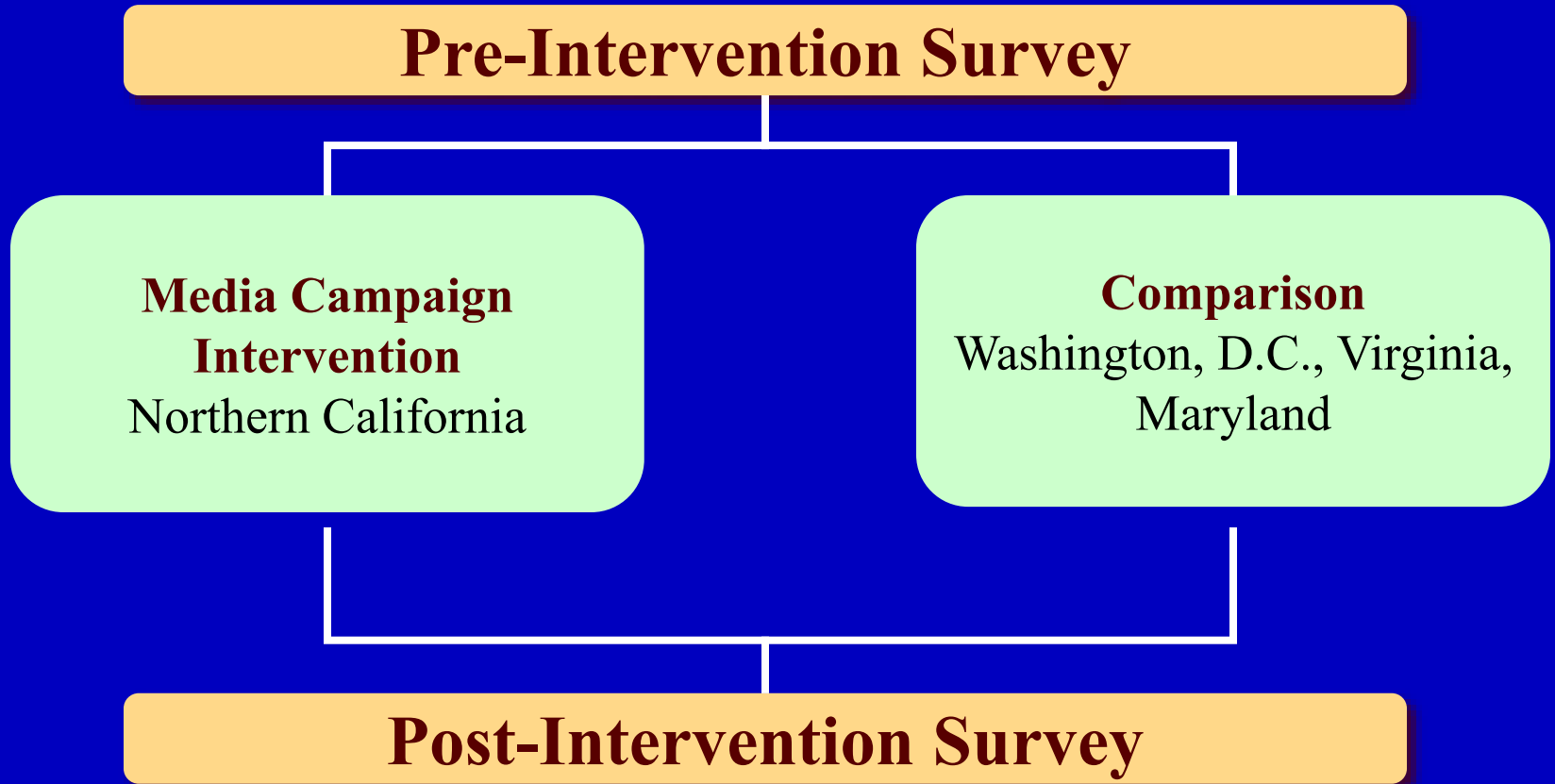
# Project Comparisons

	Project 1	Project 2	Project 3
Population: Ethnic Group	Vietnamese	Hmong	Korean
Age	18-64	18-64	18-64
Gender	Male, Female	Male, Female	Male, Female
Geographic Area	Northern California, Wash DC area	Greater Sacramento Area	Los Angeles
Outcome: Definitions	Serological testing for HBV	Serological testing for HBV	Serological testing for HBV
Study Design	Quasi- experimental	Individual RCT	Group RCT
Intervention	Media	Lay Health Worker	Church-based

# Project 1 (Vietnamese) Aims

- To raise awareness among Vietnamese Americans in Northern California about hepatitis B and hepatitis-B-related liver cancer.
- To increase rates of hepatitis B screening among Northern California Vietnamese ages 18 and older through a Media Education campaign

# Study Design



## **Factors associated with hepatitis B testing among Vietnamese Americans.**

***Nguyen TT et al. J Gen Intern Med 2010;25:694-700.***

- Telephone survey of 1,704 Vietnamese Americans age 18-64 in Northern California and Washington, DC areas.
- Cooperation rate 66%
- 93% responded in Vietnamese language
- Only 61% had a hepatitis B test (65% in Northern California)

# Knowledge of Hep B Transmission

	Northern CA % correct	DC % correct	Total
Cigarette smoking*	43.6	49.8	46.7
Sharing food,utensils	31.8	33.9	32.8
Sneezing	47.2	48.5	47.8
Sex	55.7	52.9	54.3
Sharing toothbrush	70.3	66.0	68.2
Childbirth	78.7	75.5	77.1
Sharing needles	86.0	83.2	84.6
People who feel healthy can transmit	69.1	68.6	68.8
Hep B knowledge score (range 0-8)	4.8	4.8	4.8

\*p<0.05

## Factors Significantly Associated with Hepatitis B Testing (Model 1)

	Odds Ratio
Intervention area (ref: control)	1.62
Age 30-49 (50-64)	0.71
10+ years in U.S.(<10 years)	0.69
Widowed/divorced (married)	0.61
Income < \$10,000/yr (\$50,000+)	0.52
Speaks Vietnamese less than well (fluent)	0.58
Family history of hep B (no family history)	1.78
Hep B knowledge score (each additional point)	1.20

# Factors Significantly Associated with Hepatitis B Testing: Model 1 + Discussion with Others

	Odds Ratio
Intervention area (ref: control)	1.41
Age 30-49 (50-64)	0.72
10+ years in U.S.(<10 years)	0.64
Income < \$10,000/yr (\$50,000+)	0.30
Speaks Vietnamese less than well (fluent)	0.48
Can die from hep B	0.48
Discussed hep B with family/friends (did not)	1.38
<b>MD recommends hep B test</b>	<b>4.63</b>
<b>You asked for hep B test</b>	<b>8.52</b>
Employer asked for hep B test	2.49

# Media Education: 40 Months Campaign

- Print Media
  - 13,000 booklets
  - 8,000 pamphlets
  - 10 Newspaper ads
  - Newspaper articles
  - 8,000 Calendars, 4,000 info-cards, postcards
- Electronic Media
  - 23 Radio and 10 television ads
  - Videos
  - Internet
- Linkage to low-cost or free screening programs, county clinics



# Logo



# Pamphlet



# Newspaper Ads



**Quý Vị Có Bị Bệnh Viêm Gan B Không?**

- Viêm gan B là bệnh truyền nhiễm nguy hiểm có thể gây chết người.
- Cứ 7 người Việt thì có 1 người bị bệnh viêm gan B kinh niên.

**“Hãy xin bác sĩ cho đi thử nghiệm máu viêm gan B để xem mình có bị bệnh hay không.”**

*BS. Trịnh Ngọc Huy*

Muốn biết thêm chi tiết, xin liên lạc Việt Hep B Free của chương trình **Sức Khỏe Là Vàng** ở số (415) 476-0557 hoặc [www.VietHepBFree.org](http://www.VietHepBFree.org)

**Việt HEP B FREE**



**Bệnh Viêm Gan B Kinh Niên Có Thể Chữa Được Không?**

- Hiện nay đã có nhiều loại thuốc để chữa bệnh viêm gan B kinh niên.
- Nếu quý vị bị bệnh viêm gan B kinh niên, hãy bàn với bác sĩ về việc chữa trị để được mạnh khỏe và sống lâu.

Muốn biết thêm chi tiết, xin liên lạc Việt Hep B Free của chương trình **Sức Khỏe Là Vàng** ở số (415) 476-0557 hoặc [www.VietHepBFree.org](http://www.VietHepBFree.org)

**Việt HEP B FREE**

# Newspaper Ads

Viêm gan B là bệnh truyền nhiễm nguy hiểm mà các cha mẹ của mình hay mắc phải. Bệnh này có thể gây chết người.




"Thế hệ trẻ chúng ta hãy đi thử nghiệm máu và chích ngừa viêm gan B để ngăn chặn và diệt trừ bệnh này."

- Cô Tiểu Huyền-Trần và cô Ngô Diana

Xin liên lạc Việt Hep B Free của *Sức Khỏe Là Vàng* thuộc Trường Đại Học Y Khoa San Francisco ở số (415) 476-0557 hoặc [www.VietHepBFree.org](http://www.VietHepBFree.org) để biết các địa điểm thử máu và chích ngừa viêm gan B.

**Việt HEP B FREE**

## Bệnh Viêm Gan B Có Thể Gây Chết Người!



"Người bị bệnh viêm gan B kinh niên có thể không có triệu chứng gì, nhưng bệnh có thể biến chứng thành ung thư gan."

Hãy đi thử nghiệm máu viêm gan B để biết chắc là mình có bị bệnh viêm gan B hay không."

— Ông Tiểu Phi Hồng  
Người thoát bệnh ung thư gan

Xin liên lạc Việt Hep B Free của *Sức Khỏe Là Vàng* thuộc Trường Đại Học Y Khoa San Francisco ở số (415) 476-0557 hoặc [www.VietHepBFree.org](http://www.VietHepBFree.org) để biết các địa điểm thử máu và chích ngừa viêm gan B.

**Việt HEP B FREE**



# Newspaper Ads

Viêm Gan B Là Bệnh Truyền Nhiễm Có  
Thể Lây Từ Mẹ Cho Con Trong Lúc Sinh.

Hãy Xin Bác Sĩ Cho Đi  
Thử Nghiệm Viêm Gan B  
Để Biết Tình Trạng Viêm  
Gan B Của Mình.



Xin liên lạc Việt Hep B Free của *Sức Khỏe Là Vàng* thuộc Trường Đại Học Y  
Khoa San Francisco ở số (415) 476-0557 hoặc [www.VietHepBFree.org](http://www.VietHepBFree.org)  
để biết các địa điểm thử máu và chích ngừa viêm gan B.

Viêm Gan B Là Bệnh Nguy Hiểm  
Cho Cả Gia Đình



Hãy Bàn Với  
Nhau Và Xin  
Bác Sĩ Cho Đi  
Thử Nghiệm  
Viêm Gan B.



Xin liên lạc Việt Hep B Free của *Sức Khỏe Là Vàng* thuộc Trường Đại Học Y  
Khoa San Francisco ở số (415) 476-0557 hoặc [www.VietHepBFree.org](http://www.VietHepBFree.org)  
để biết các địa điểm thử máu và chích ngừa viêm gan B.

# Website

## www.viethepbfree.org



# Post-Intervention Surveys

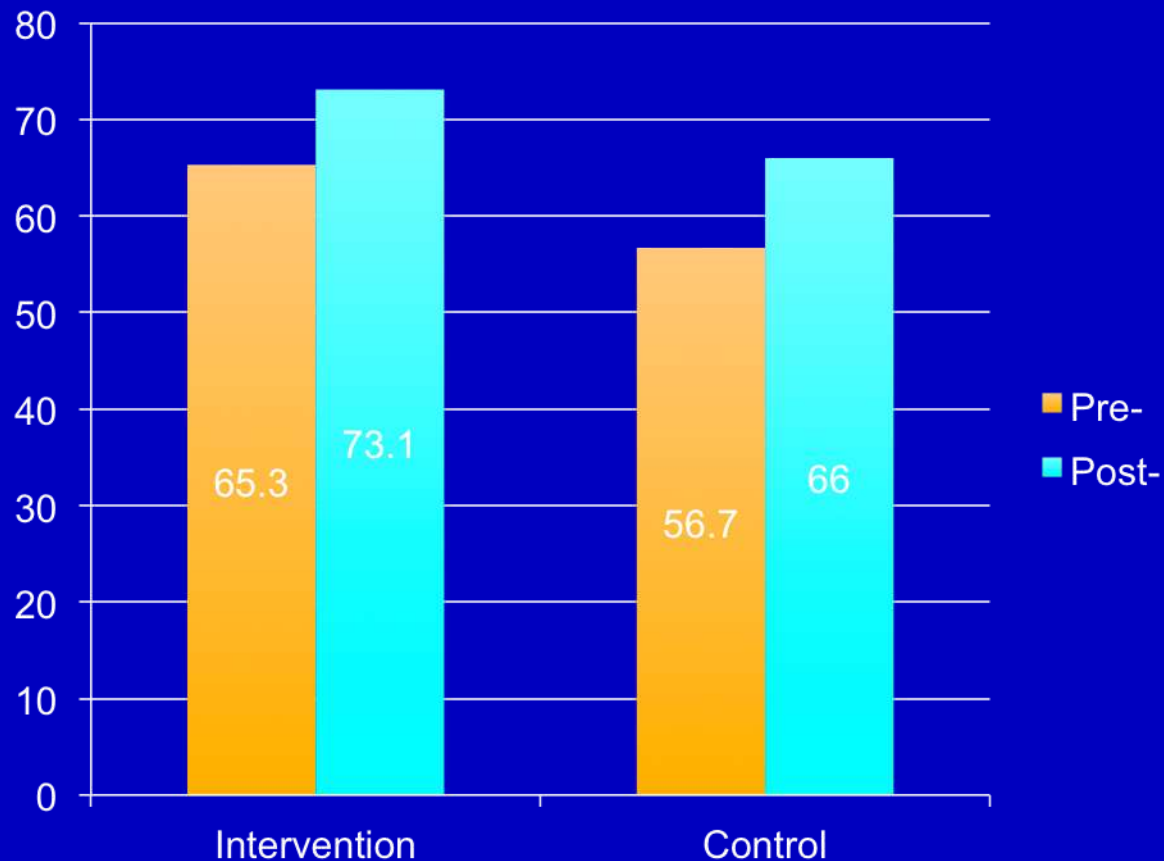
- Pre-Intervention Survey: N (response rate)
  - Intervention: 871 (25.8%)
  - Comparison: 833 (29.3%)
- Post-Intervention Survey
  - Intervention: 857 (29.3%)
  - Comparison: 809 (23.1%)

# Media Exposure

- Exposure to hepatitis B-related newspaper articles or ads increased in the intervention but not comparison community.
- Both communities reported increases in exposure to hepatitis B-related pamphlets, booklets, radio and television advertisements, and websites.



# Had Hepatitis B Screening (%)



p-value

Intervention  $\Delta < 0.001$

Control  $\Delta < 0.001$

Intervention vs. Control  $\Delta 0.9$

# Multivariate Analyses: Had Hep B Screening

	Estimate and p-value or Odds Ratio (95% CI)
Intervention Term	Est = $-0.150 \pm 0.163$ ; p-value 0.356
Has health insurance	<b>1.37 (1.10, 1.71)</b>
Has family of hepatitis B	<b>1.85 (1.46, 2.33)</b>
Media exposure (each additional element)	<b>1.26 (1.21, 1.31)</b>

Adjusted for age, sex, marital status, length of US residency, Vietnamese language fluency, household income, having a regular doctor, doctor's ethnicity

# Community-Based Interventions to Promote Hepatitis B Testing

Liver Cancer Control for Asian Americans

NCI P01CA109091-04A1



# Project 2: Community Based Hep B Interventions for Hmong Adults



**Moon S. Chen, Jr., Ph.D., M.P.H.**  
Project Leader

# Who Are the Hmong?



- American ally from the Vietnam Conflict
- Fastest growing population in Sacramento County, 195.3%
- Only 2.8% of Hmong Americans have at least a bachelor's degree
- The per capita income for Hmong Americans is \$4,885





Hmong Cultural Center  
Of Butte County

Hmong Women's  
Heritage Association

# Greater Sacramento Area



# Lay Health Worker Visiting Home Conducting Survey



# Examples of nutrition and HBV flip charts

## Kashia Health Program

Healthy Eating Education Flip Chart

### Why am I here?

You have been chosen to be part of the Kashia Health study. We want to help you eat healthy foods and maintain a healthy weight.

Tell me what you already know about eating healthy foods and maintaining a healthy weight.

*Let them tell you about healthy eating, healthy foods, and healthy weight and when they are finished, flip the chart...*



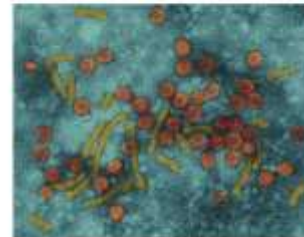
## Kashia Health Program

A Hepatitis B Education Flip Chart

### What do you know about hepatitis B?

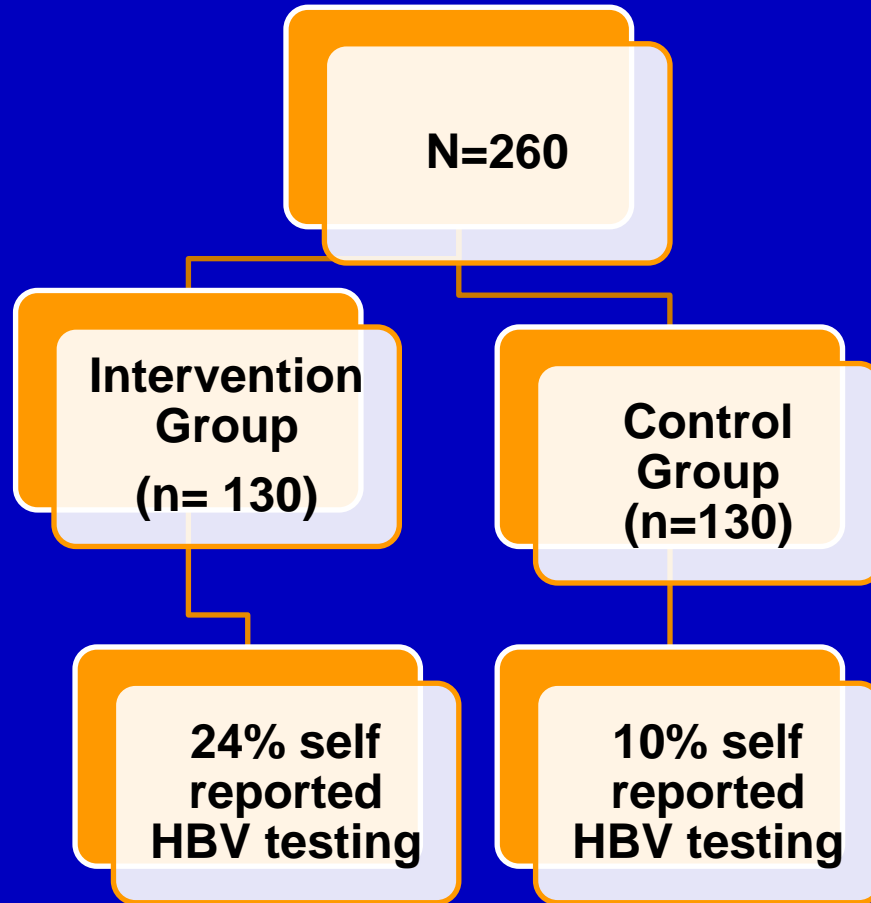
(Allows some time for participant to explain to you about Hepatitis B)

- Here are pictures of the hepatitis B virus. It is very small and you can't see it with your naked eyes.
- Hepatitis B is a severe infection of the liver caused by the hepatitis B virus. The virus can spread from person to person. Hepatitis B can cause scarring of the liver, liver cancer and death.





# Intervention effectiveness



**P=0.005**

# Factors associated with Self-Reported Hepatitis B testing

	<u>Odds ratio</u>
Intervention vs. Control	3.51
Female vs. Male	5.27
Seen MD in last 12 months	4.83
Change in knowledge score (each unit)	1.32

# Community-Based Interventions to Promote Hepatitis B Testing

Liver Cancer Control for Asian Americans

NCI P01CA109091-04A1



# Community-Partnered Intervention to Reduce Liver Cancer Disparities among Koreans: A Cluster Randomized Trial

Roshan Bastani, Ph.D., Beth A. Glenn, Ph.D.,  
Vicky Taylor, M.D., M.P.H.\*, Annette Maxwell, Dr.P.H.,  
Weng Kee Wong, Ph.D., Angela Jo, M.D., M.S.H.S.,  
Catherine M. Crespi, Ph.D., Alison K. Herrmann, M.S.,  
Cindy Chang, M.S.

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Fielding School of Public Health & Jonsson Comprehensive Cancer Center

**\*Fred Hutchinson Cancer Research Center, Seattle, WA**



Funded by NCI P01CA109091

# Study Design



**Stratified Random  
Assignment of Churches  
(N=52)**



**Intervention**  
Churches (N=26)

In-Person  
Baseline Interview

**Hepatitis B**  
Small Group Discussion

6-Month Telephone  
Follow-up

**Control**  
Churches (N=26)

In-Person  
Baseline Interview

**Diet/Physical Activity**  
Small Group Discussion

6-Month Telephone  
Follow-up

# Recruitment at Mega Church



# Small Group Session



- 8-10 participants
- 1 hr, interactive discussion
- PowerPoint used to convey complex information
- Use of small group format:
  - Establish social norms
  - Reduce stigma
  - Ensure active participation

# Random Assignment (N = 52 Churches)

26 Churches

26 Churches

N = 896

**Eligibility Screen N = 1867**

*18-64 yrs, Korean, live in LA, no Hep B test or don't know results*

N = 971

N = 571

**Eligible N = 1196 (64%)**

*Majority (96%) ineligible due to prior Hep B testing*

N = 625

N = 543

**Completed In-Person Baseline  
N = 1123**

N = 580

**Hepatitis B Group**

N = 543

**Nutrition/Physical Activity**

**Group N = 580**

**6 Month Telephone Follow-up**

(n = 455, 84% retention)

***Hep B Tested = 19%\****

**6 Month Telephone Follow-up**

(n = 506, 87% retention)

***Hep B Tested = 6%\****



# Intervention Effect (N = 1123)

## Participants Screened for Hepatitis B During the Study Period Intent-to-treat Analyses of all Randomized Subjects

Churches	<u>Test Rate:</u> Intervention Group	<u>Test Rate:</u> Control Group	<u>Difference:</u> I vs C	<u>Odds Ratio</u>	<u>P Value</u>
<b>ALL</b>	<b>19%</b> (104/543)	<b>6%</b> (33/580)	<b>13%</b>	<b>4.9</b>	<b>&lt;.001</b>
Small	17% (36/206)	4% (9/218)	13%	5.3	.004
Medium	19% (30/161)	4% (7/191)	15%	6.4	<.001
Large*	22% (38/176)	10% (17/191)	12%	3.1	.152
Koreatown*	20% (50/249)	11% (23/213)	9%	2.4	.105
Non-Koreatown	18% (54/296)	3% (10/369)	16%	8.6	<.001

\* Hep B screening events held at several Koreatown churches during study period

## Results omitting pairs of churches where Hep B free screening held

Churches	<u>Test Rate:</u> Intervention Group	<u>Test Rate:</u> Control Group	<u>Difference:</u> I vs C	<u>Odds Ratio</u>	<u>P Value</u>
Large	15%	3%	12%	5.1	.026
Koreatown	16%	6%	10%	2.9	.025

# Some Lessons Learned from Program Grant

- Self-reporting a major problem for the measurement of outcomes for community-based education for hepatitis B testing.
- Physician and clinical care factors strongly affect hepatitis B screening.
- Care for those who are found to have hepatitis B on screening remains sub-optimal.

# Few Clinical Intervention Studies to Promote Viral Hepatitis Screening

- PubMed search in February 2012 for “Controlled Trial” and “Asian” from 1990 to 2012
  - 57 non-drug or device studies with outcomes
  - 11 involved healthcare providers or patients
    - none was on HBV
- Very few studies looking at promotion of hepatitis C screening

# **A Patient-Centered Intervention to Increase Screening of Hepatitis B and C among Asian Americans**

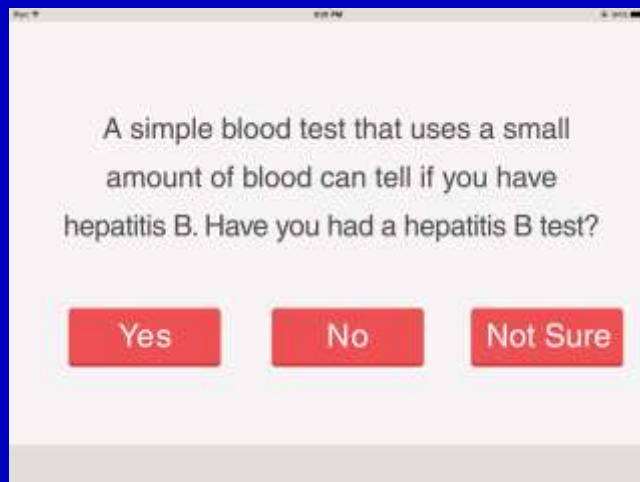
- Patient-Centered Outcomes Research Institute
- UCSF Medical Center General Medicine and Family Practice : ~7800 Asian patients (40-65% HBV screened)
- San Francisco General Hospital/CHN: ~15,000 Asian patients (44% HBV screened)
- Stakeholders: SF Hep B Free, SF Hep B Quality Improvement Collaborative, SF-AANCART

# Specific Aims

- 1) Develop a novel intervention consisting of an interactive patient education video (Video Doctor) and Provider Alert to increase screening of hepatitis B and C in Asian American patients.
- 2) Evaluate the efficacy of the Video Doctor and Provider Alert intervention combined with Provider Panel Notification compared to Provider Panel Notification alone in increasing screening for hepatitis B and C among Asian Americans in 2 healthcare systems using a group (provider) randomized controlled trial.

Not an aim but include: Patient and Stakeholder Activities

# Tablet Application



# Community Activities

- San Francisco Hep B Free
  - Mostly in English and Chinese
- San Francisco Hepatitis B Quality Improvement Collaborative



# SF Hep B Free

- Launched in April 2007
- A public awareness campaign targeting and embracing all sectors of society with the mission of institutionalizing into the medical infrastructure sustainable routine HBV screening with access to vaccination & follow-up

A collaborative effort between the SF Department of Public Health, AsianWeek Foundation, and Asian Liver Center at Stanford – no dedicated funding stream









**WHICH ONE DESERVES TO DIE?**

Stop liver cancer.  
Get tested for hepatitis B.

SFhepBfree.org

**B**

**!**



**WHICH ONE DESERVES TO DIE?**

1 in 10 Asian Americans is infected with hepatitis B, the leading cause of liver cancer. But hepatitis B can be treated, even prevented. Get the simple blood test. Stop liver cancer by stopping hepatitis B.

IF A WOMAN, SEE A DOCTOR WHO TESTS FOR HEP B.

SFhepBfree.org

**B**

**!**

# **SF Hepatitis B Quality Improvement Collaborative (QIC)**

- Led by San Francisco Hep B Free and UCSF Clinical and Translational Science Institute
- Diverse group of partners to improve the quality of hepatitis B care in San Francisco.
  - Providers: Kaiser SF, Chinese Community Health Care Association, North East Medical Services, UCSF, SFGH/CHN/Community Clinic Consortium
  - Department of Public Health
  - Brown & Toland, Hills Physicians
  - Asian Week Foundation

# Conclusions from Hepatitis B Studies

- Media campaigns have a wide reach but limited efficacy among Vietnamese.
- Lay health workers are effective but has limited reach among Hmong.
- Interventions delivered through churches are effective and has a broad reach among Koreans.

# Acknowledgements

- Funding from NIH/NCI
- Vietnamese Community Health Promotion Project investigators and staff (Director Emeritus: Stephen J. McPhee)
- Asian American Network for Cancer Awareness, Research, and Training (PIs: Moon Chen, Ed Chow)