



1990
INSTITUTE

CHINA NOW
China on the Move
July 26 & 27, 2019



China Now: China On the Move

Friday, July 26 and
Saturday, July 27, 2019

101 Twin Dolphin Drive, Redwood City,
California

In Partnership with the
San Mateo County Office of Education



Cosponsored by
USC US-China Institute



Join Jade and Jade Ribbon Campaign to Eliminate Hepatitis B and Liver Cancer

Samuel So, MD, FACS
Professor of Surgery
Lui Hac Minh Professor
Founder and Director, Asian Liver Center
Stanford University School of Medicine

257,000,000

people worldwide living with chronic hepatitis B

887,000

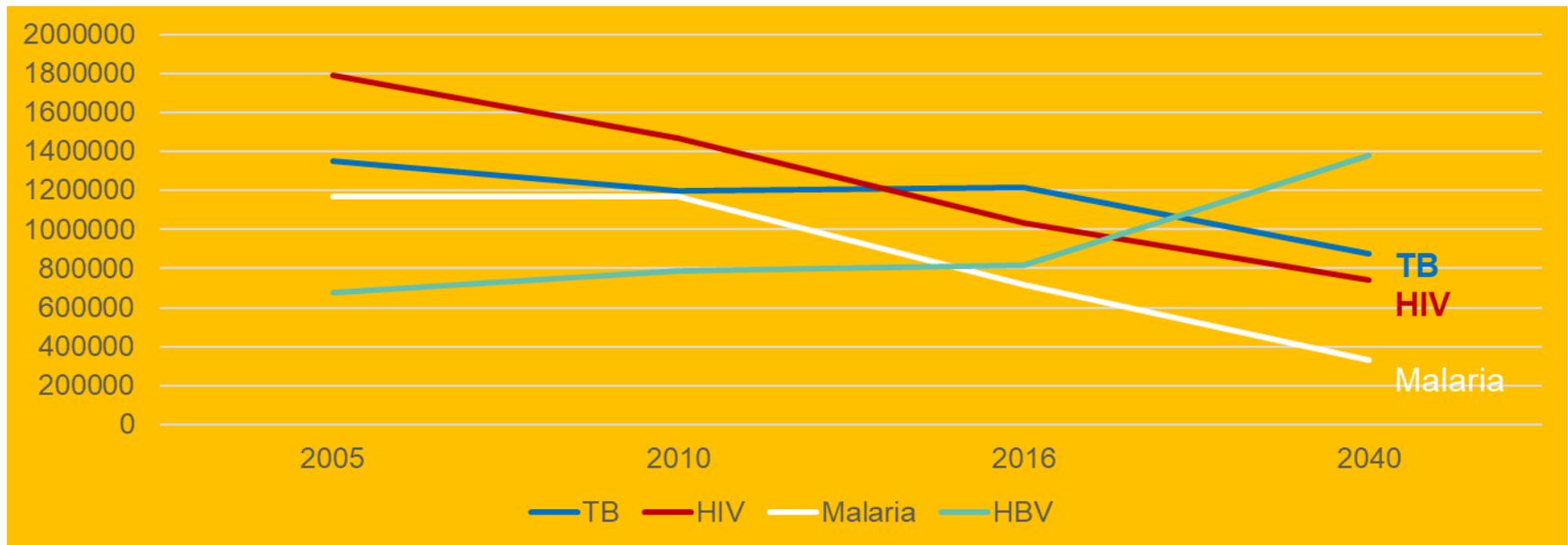
died in 2015 largely from undiagnosed/untreated infection



WHO, Global Hepatitis Report, 2017



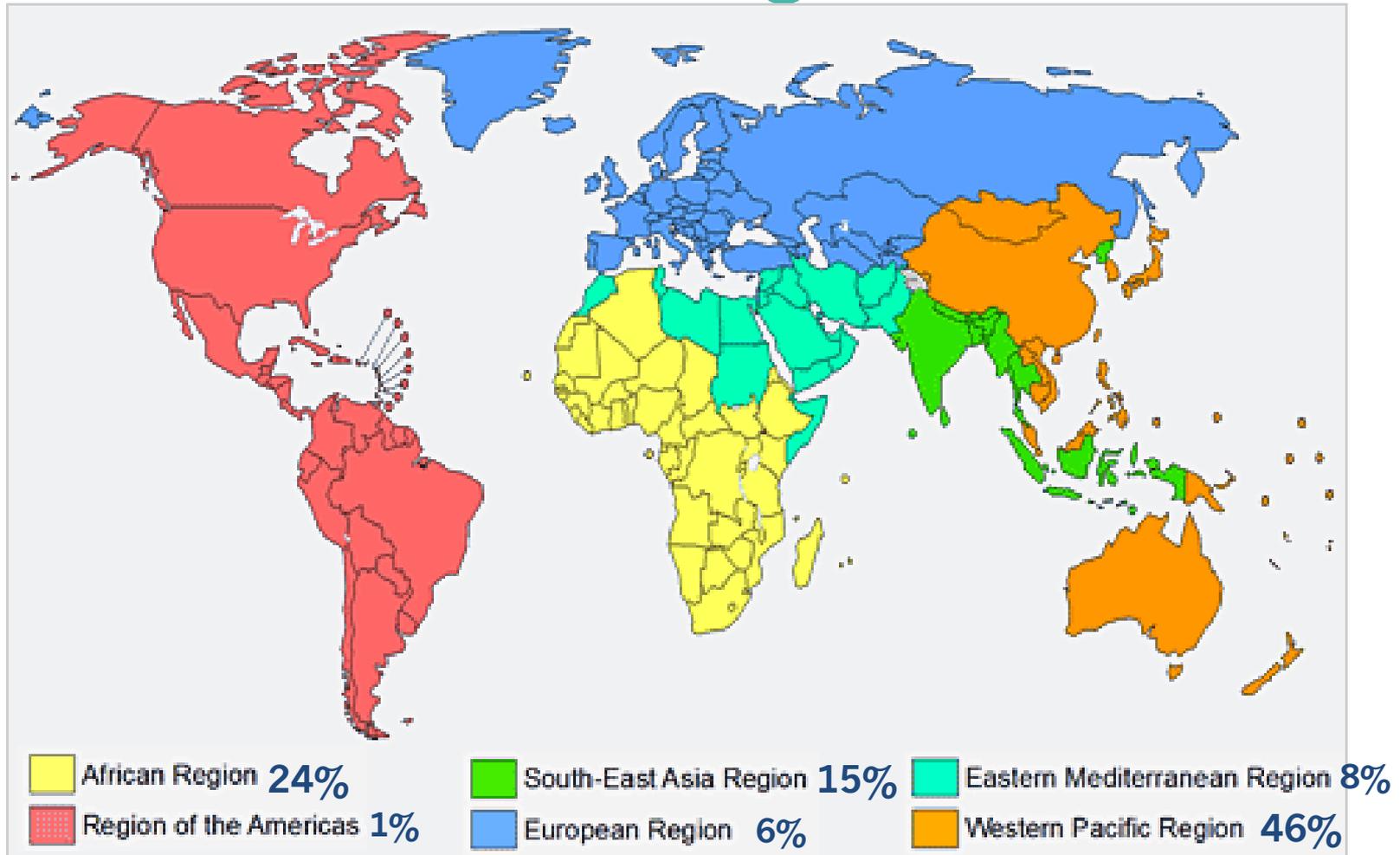
Hepatitis B Deaths will soon Surpass HIV/AIDS



Lancet 2018; 392: 1736–88; Lancet 2018; 392: 2052–90 V Lancet 2012, 380,(9859); 2095-2128 (adapted from the Task Force fro Global Health)

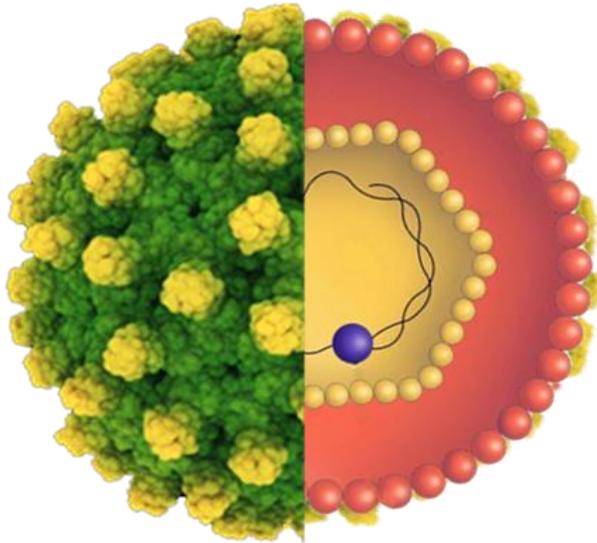


Burden of Chronic Hepatitis B by WHO Regions



What is Hepatitis B?

Hepatitis B Virus (HBV)



Dr. Baruch Blumberg



Oldest Viral Infection in Man?

HBV Core Curriculum 2008: Epidemiology and Natural History

CLINICAL CARE OPTIONS
HEPATITIS

Korean Mummy Found With HBV

- Virus discovered in the liver of the South Korean Handong mummy
 - 500-year-old child
- First time HBV ever been found in a mummified body
- Study of the genome of the 500-year-old virus under way
 - To see if there have been any significant changes to HBV over time



Source: Seoul National University

<http://www.sciencedaily.com/releases/2007/07/070725093556.htm>

clinicaloptions.com/hep



Patterson R et al (2018).
PLOS Pathogens 14(1):
e1006750

Transmission Routes of HBV



Birth

Infected mother to newborn
(common in Asia)



Blood



Sex

Unprotected sex

WHO hepatitis B fact sheet, 2017

Hepatitis B is not transmitted by food or casual contact



Sharing food or drinks



Shaking Hands



Kissing

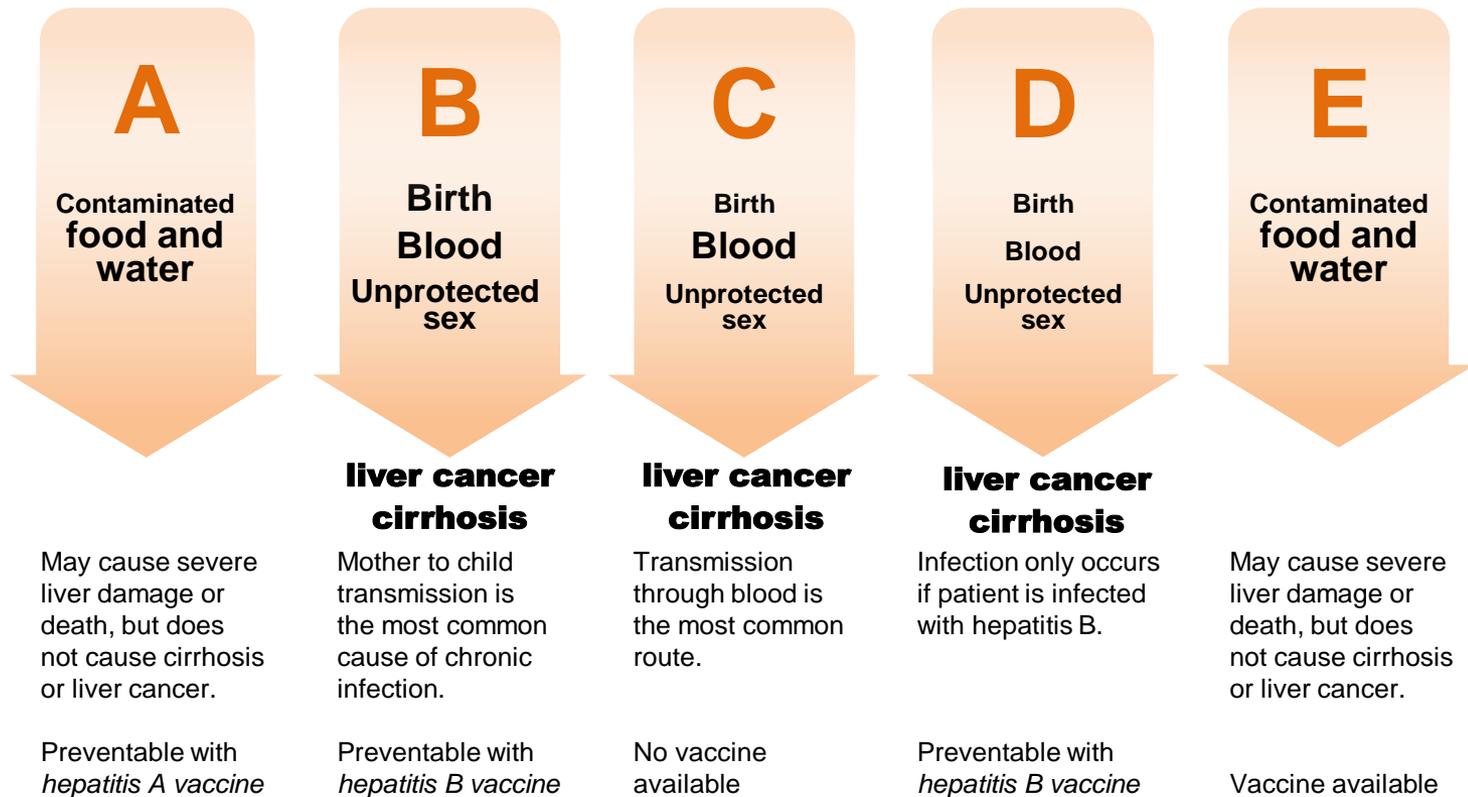


Sneezing

MODULE 2

Types of Viral Hepatitis and Transmission Routes, Hepatitis B Facts, Diagnosis, and Immunization

Types of Viral Hepatitis



Chronic Hepatitis B is a Silent Killer

- **Most people** are not aware they are infected because their doctors have not tested them
- Most have no symptoms, and blood tests for liver enzymes are often normal
- Increases the risk for liver cancer 100x
- Left undiagnosed and monitored for treatment, 1 in 4 will die of liver cancer or liver disease



Lin SY, Chang ET, So S. Hepatology 46:1034-1040, 2007

Eliminating Chronic Hepatitis B as a Public Health Problem is Feasible

- **Ending transmission**
 - Hepatitis B vaccine
 - Safe injection and blood banking
- **Reducing morbidity and mortality** from cirrhosis and liver cancer
 - Antiviral treatment
 - Liver cancer screening
- **Eliminating disease stigma**



Public Health Impact of Chronic Hepatitis B in the U.S.

	Estimated Number of People with chronic hepatitis B in the U.S. in 2015	Estimated Number of New chronic viral hepatitis Cases per year
Hepatitis B	1.3 million (870,000 or 66% are unaware of their infection)	25,000 (95% imported through migration, about 3.5% from perinatal transmission)

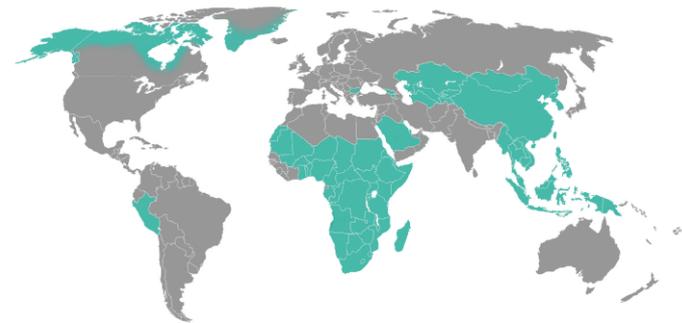
A national strategy for the elimination of hepatitis B and C: Phase two report. Washington, DC: The National Academies Press. 2017.

Who should be Screened for Chronic Hepatitis B

Were you
born in a
purple region?



Were your
parents
born in a
jade region?



Chronic HBV Infection is Among the Greatest Racial/Ethnic Health Disparities in the U.S.

Adult Racial/Ethnic Population	Prevalence of Chronic HBV Infection
Asian and Pacific Islander (foreign born)	1 in 12
Asian and Pacific Islander (US born)	1 in 70
African American (US and foreign born)	1 in 200
Hispanic (US and foreign born)	1 in 1,100
White (US and foreign born)	1 in 800

APIs make up 6% of the U.S. population, but over **60%** of those in the U.S. with chronic HBV infection.

Source: CDC draft ACIP recommendations, 2005

10 Most Common Causes of Death from Cancer in API Men in the US

1. Lung and bronchus
2. **Liver**
3. Colon and rectum
4. Prostate
5. Stomach
6. Pancreas
7. Non-Hodgkin lymphoma
8. Leukemia
9. Esophagus
10. Brain

San Francisco and Santa Clara are among the counties
With the highest incidence of liver cancer in the country

Source: US Cancer Statistics: 2013 Incidence and Mortality Web-based Report. Available at nccd.cdc.gov/uscs

Asians were dying from liver cancer/cirrhosis due to chronic HBV infection from lack of awareness and gaps in national policies



Asians

- Don't know about the seriousness of hepatitis B
- Were not tested
- Were not vaccinated

Doctors

- Did not screen or know how to screen for chronic HBV
- Don't know how to care for infected patients
- Don't screen the infected for HCC

In 1996, there was no comprehensive national strategy to prevent, screen and treat chronic HBV

- No hepatitis B screening recommendation for API (except if pregnant)
- Adult hepatitis B vaccination was not covered unless you fall into the high risk groups (e.g. healthcare workers, PWID)
- No national/state/county health agencies recognized chronic HBV infection and liver cancer in API as a health disparity
- No funding to address chronic HBV or liver cancer
- No national or global elimination initiative

Asian Liver Center at Stanford University

- Founded in 1996
- To address the disproportionately high prevalence of chronic HV and liver cancer in Asians and Asian Americans and the gaps in hepatitis B and liver cancer awareness, research and national policies

C - collaboration & partnership

A - evidence based advocacy

R - research

E - education & training

- Goal: **Global elimination of hepatitis B, and reduce the burden of liver cancer worldwide**

liver.stanford.edu

Asian Liver Center at Stanford University

CJ Huang Building
780 Welch Rd, Palo Alto, CA



Stanford Center at Peking University
Beijing, China



Jade Ribbon/JOINJADE Campaign Launched in 2000



Jade = Good health & longevity

Raise Awareness and Unite People Worldwide to End Hepatitis B and Liver Cancer



Jade Ribbon/JoinJade

- A culturally and linguistically appropriate hepatitis B and liver cancer awareness campaign
- Five Key Messages
 - **Get informed** (1 in 12 Asians have hepatitis B, 2 out of 3 are not aware of their infection)
 - **Get tested**
 - **Get vaccinated** if unprotected
 - **Get care** and treatment, and screen for liver cancer if chronically infected
 - **Wear jade or the jade ribbon**, tell your friends and family, and support those living with chronic hepatitis B and liver cancer

Chao S, So S, J Commun Healthcare 2011

JR: Community Outreach to Increase Hepatitis B Awareness, Screening, Vaccination, Care, and Treatment



TAKE THIS CARD TO YOUR DOCTOR

- I want to get tested for hepatitis B
HBsAg (CPT: 87340)
anti-HBs (CPT: 86706)
- I want to get the hepatitis B vaccine
Adult 3 dose vaccine (CPT: 90746)

Eligible as free preventive services with no out-of-pocket charge under Medicare & ACA

<https://healthcare.gov/preventive-care-benefits>

This message brought to you by JoinJade, the campaign to stop hep B stop liver cancer

JR: Partner with Cities and Counties to Launch Hep B Free Campaigns (since 2007)



Together, we all can end Hepatitis B.

Be Sure. Be Tested. Be Hep B Free.

www.sfHepBfree.org

Mayor Gavin Newsom and Assemblywoman Fiona Ma

Be a hero!
Save lives! Stop hepatitis B!

BE TESTED. BE VACCINATED. BE TREATED.

Did you know?

- Hepatitis B (HBV) is the most common serious liver infection and the major cause of liver cancer worldwide
- It is sometimes called the "silent killer" because infected people may feel perfectly healthy

How do people get HBV?

- The same way people get HIV – from an infected mother at birth, blood, sex
- HBV is **NOT** transmitted through food and water

Early Detection is Key

- GET TESTED... if you, or your parents, come from Asia or the Pacific Islands
- It is a simple blood test. Ask your doctor
- GET VACCINATED... a series of 3 shots given over 6 months can protect you for life

B SURE • B TESTED • B FREE

For more information:
www.sfhepbfree.org
1.888.311.3331

1 in 12 Asian Americans are infected with hepatitis B.

2 in 3 don't know their infection status because they have not been tested.

1 in 4 will die of liver disease without long term medical care.

Ask your doctor to test you for hepatitis B

We're committed to reducing hepatitis B in Santa Clara County

JR: Inspire Youths to Become Leaders and Hepatitis B Ambassadors

13th ALC Annual Youth Leadership Conference, Aug 2015



Team HBV High School Chapters

Amador Valley	Homestead	Oxford Academy
Ann Sobrato	Independence	Palo Alto
Arcadia	Irvine	Piedmont Hills
Archbishop Mitty	Leland	Redmond
Bellaire	James Logan	San Francisco University
Bellarmino College Prep	Lick-Wilmerding	San Leandro
Burlingame	Lowell	San Mateo
California	Lynbrook	Saratoga
Carnegie Vanguard	Los Altos	Stanford Online
Castilleja	Los Gatos	The Harker
Castro Valley	Maria Carrillo	Quarry Lane
Chapel Hill	Menlo-Atherton	Troy
Davis Senior	Mission San Jose	University
Dougherty Valley	Mills	Upland
Dublin	Milpitas	Valley Christian
Solsom	Mira Loma	Western Sierra
Foothill	Mountain View	Woodside Priory
Gunn	Neuvo	

TEAM HBV
Collegiate Chapters

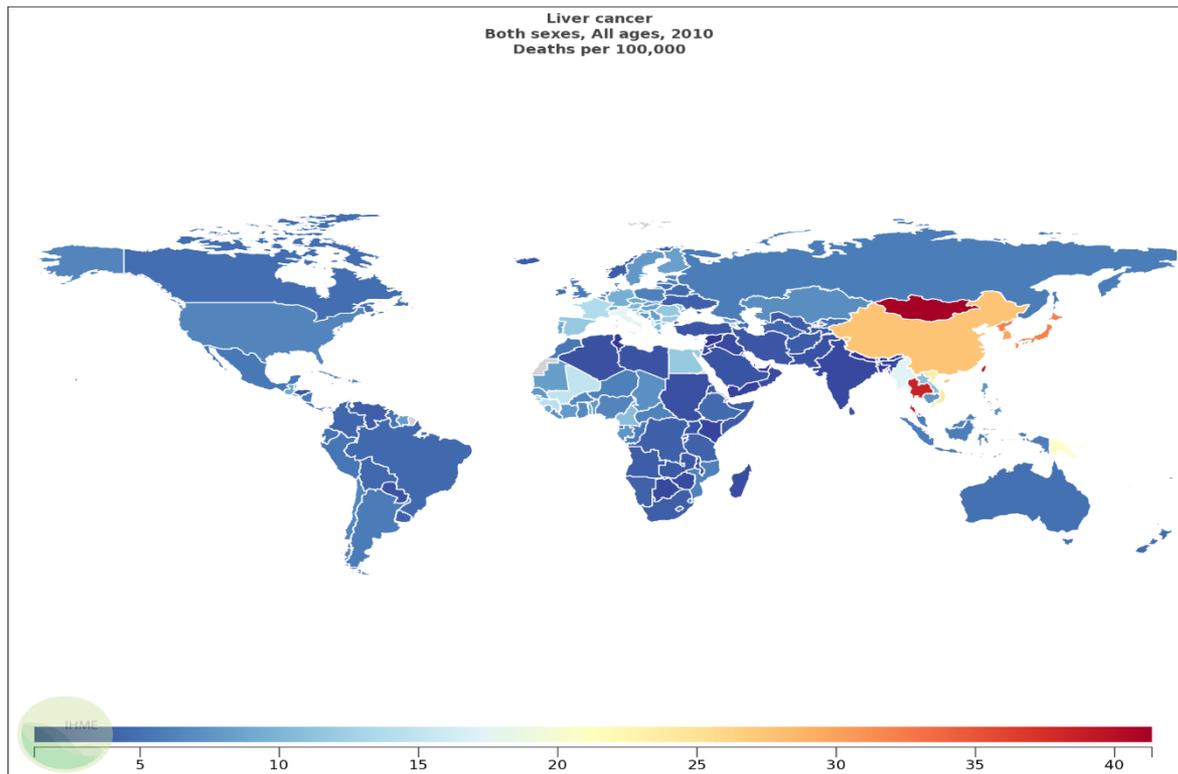
Brigham Young, Brown, Cornell, DeAnza, Harvard, MIT, New York City, Northwestern, Rutgers, Stanford, Stony Brook, U Chicago, U Nevada, UC Berkeley, UC Davis, UCLA, UC Riverside, UC San Diego, U Pacific, Wingate.

ALC Spearheads Initiatives to Improve Hepatitis B Prevention and Control Policies in the U.S.

- 2008, **OMH recognized chronic HBV infection in API as a serious neglected national health disparity**
- 2010, Institute of Medicine Report on *a national strategy on prevention and control of hepatitis*
- 2011, DHHS released the first *ever national action plan for prevention, care and treatment of viral hepatitis*
- 2014, USPSTP recommends hepatitis B screening of foreign born
- 2015-16, **ACA and Medicare covers hepatitis B screening of foreign born and adult hepatitis B vaccination**
- 2016-17, **National Academies Reports on Eliminating the Public Health Problem of Hepatitis B and C in the U.S.**



Burden of Liver Cancer and Chronic HBV in China



China accounts for **54%** of the 728,000 liver cancer deaths and **a third** of those living with chronic HBV infection in the world in 2010

Globocan 2008, globocan.iarc.fr
2010 Global Burden of Disease

Why Eliminating Hepatitis B and Liver Cancer should be a National Priority in China

*National Conference on the Prevention and Control of Viral Hepatitis in China
Hangzhou, China April 26-29, 2004*



Advocated China to Adopt a Comprehensive National Hepatitis B Elimination Strategy

- **Ending transmission**
 - Hepatitis B vaccine (newborns, children and adults)
 - Screening all pregnant women
 - Safe injection and transfusion practices
- **Reducing morbidity and mortality** from cirrhosis and liver cancer
 - Affordable antiviral treatment
 - Monitoring and liver cancer screening for early detection
- **Eliminating disease stigma and discrimination**
 - Introduce and enforce laws to ban discrimination
- **National awareness and education campaign**

Partnered with the China Foundation for Hepatitis Prevention and Control and CDC

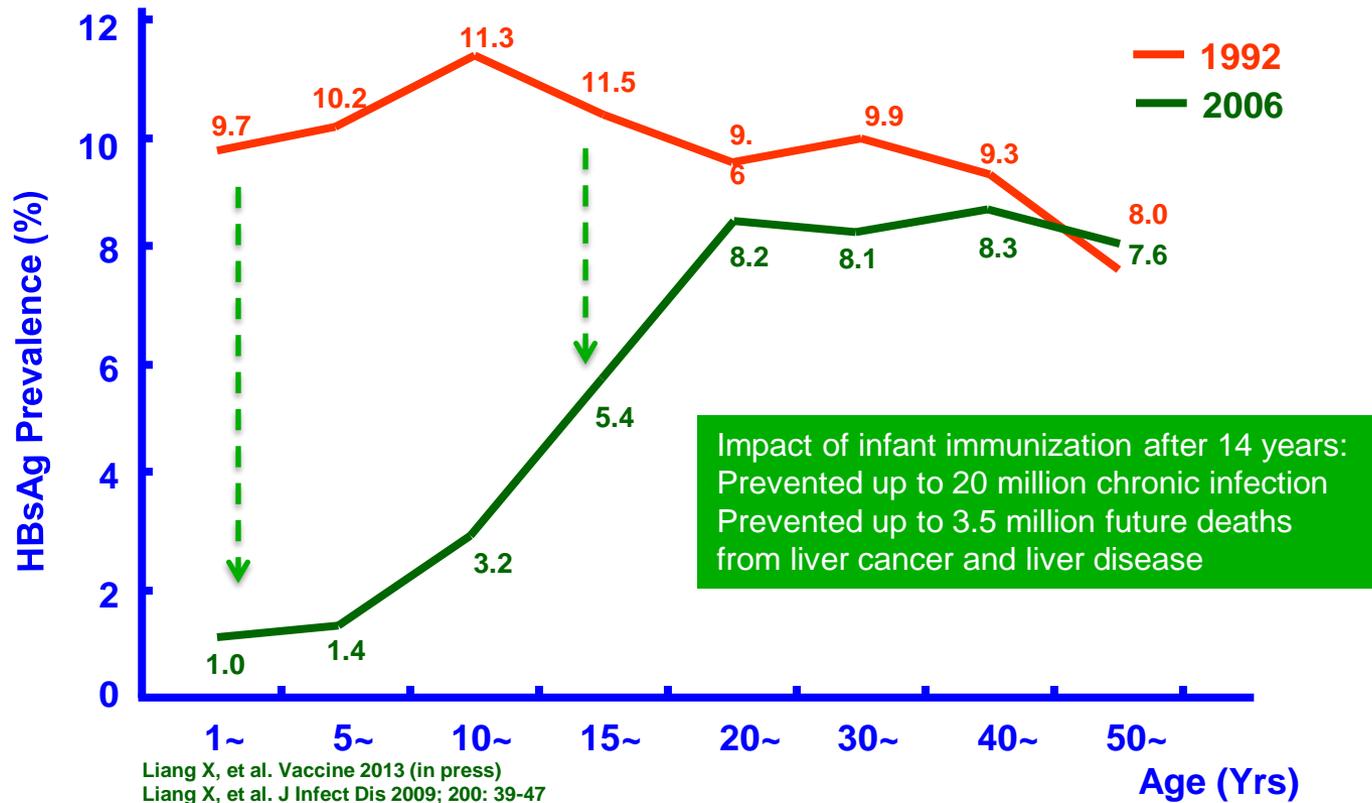


Traveled across China to conduct Hepatitis B and Liver Cancer Educational Seminars and Workshops

(National CDC meetings, provincial CDC staff, Medical schools, colleges)



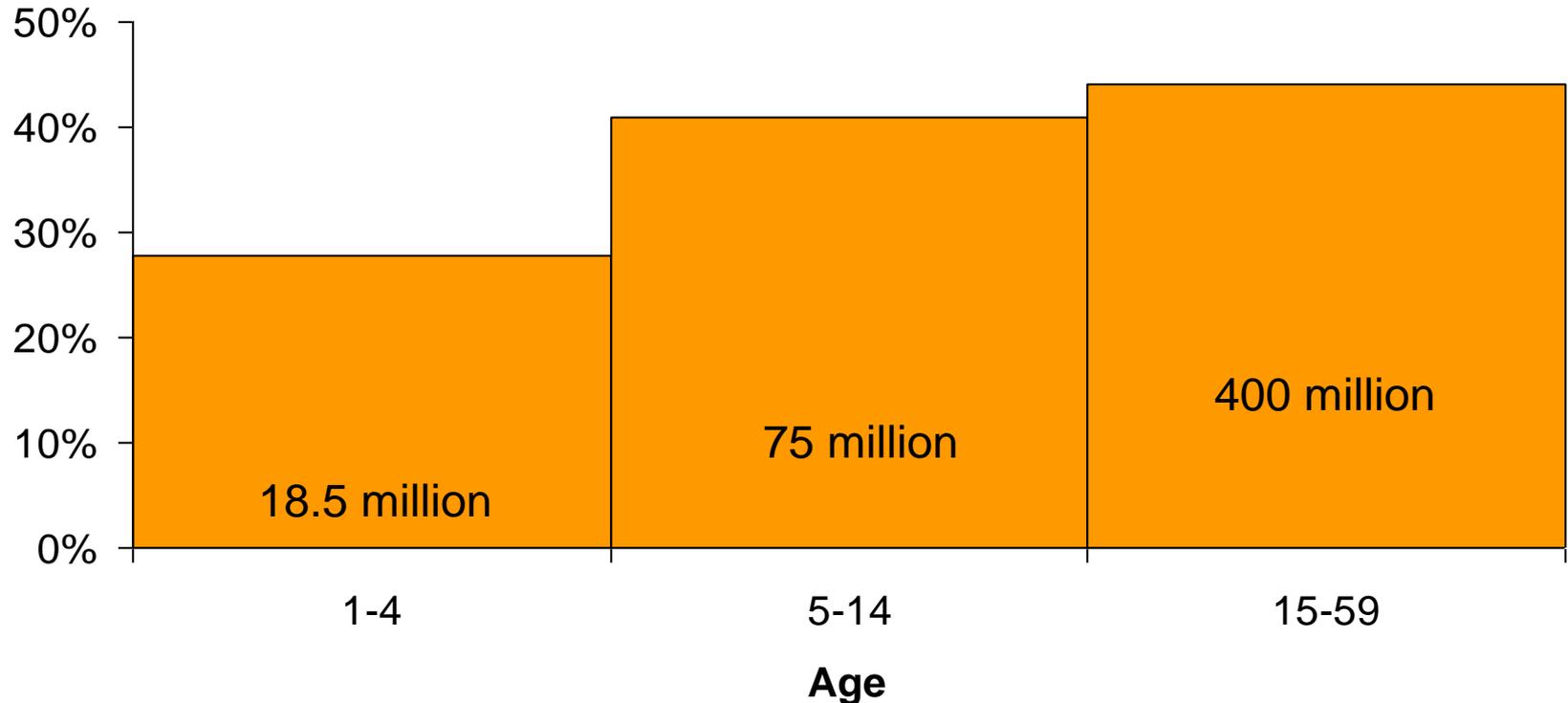
Infant Hepatitis B Immunization Reduced the Future Burden of Chronic Hepatitis B infection and Liver Cancer in China



Liang X, et al. Vaccine 2013 (in press)
 Liang X, et al. J Infect Dis 2009; 200: 39-47
 Courtesy of Prof Zhuang Hui, PKU

Estimated Fraction of Chinese Population susceptible to Hepatitis B Infection in 2006

Fraction Susceptible



Based on 2006 National Hepatitis Survey, Chinese Ministry of Health, June 2008
http://www.gov.cn/xwfb/2008-04/21/content_950425.htm

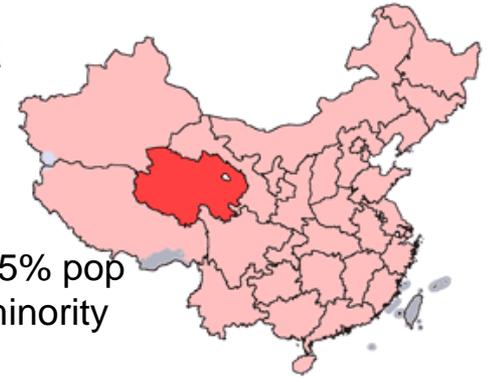
Raised Funds for Hepatitis B Education and Free Vaccination for 100,000 Children in China, 2005-2006



Qinghai



Launched Largest, Free Catch-Up Vaccination and Education Program in China



Qinghai, 45% pop
Is ethnic minority



认识乙肝和肝癌 人人有责

青海是乙肝高发区，每十个人就有一人是乙肝病毒携带者。乙肝病毒可以损害肝脏，造成长期发炎，导致肝病，肝癌甚至死亡。

在我国，乙肝问题比艾滋病严重。每年有三十五至五十万人死于乙肝感染引发的肝病或肝癌。

乙肝疫苗被世界卫生组织称为第一种“抗癌疫苗”

大多数的肝癌是由乙肝病毒引起，因此，防乙肝病毒感染也就等于防肝癌。

按时完成三针乙肝疫苗保护你和宝宝的一生

乙肝疫苗安全又有效，只要没受到乙肝感染的人打上这三针，就一辈子不怕受乙肝病毒感染。

乙肝病毒携带者母亲要记住在宝宝出生后24小时内立即接受第一针乙肝疫苗注射来阻止感染。

乙肝病毒的传染方法和艾滋病一样

乙肝是通过母婴，血液和性接触传染，所以：

- 不要接受重复使用的针头、针筒或针灸来进行注射或治疗，也不要用它来纹身和纹眉。
- 不要共用容易染血的物品如牙刷或剃须刀。
- 不要随便接触别人的血液或伤口。
- 不要注射毒品。
- 不要在发生婚外性行为。

日常接触携带者是不会感染上乙肝

不要担心与乙肝携带者一起生活和工作，也不要歧视他们。经证明，乙肝病毒不会通过以下途径来传播：

- 不会通过和携带者一起饮食或共用餐具而传染。
- 不会经打喷嚏、拥抱、握手、接吻等传染。
- 不会因母乳喂养而传染。

你知道吗？

小朋友们都接种健康快乐身体好

预防乙肝有疫苗 注射三针不能少

孩子们！你知道怎么保护自己不受乙肝感染吗？

“病毒丝带”老师

加入青海翡翠丝带活动 共建和谐社会！

在我国，乙肝是一个很严重的健康问题！

“病毒丝带”老师

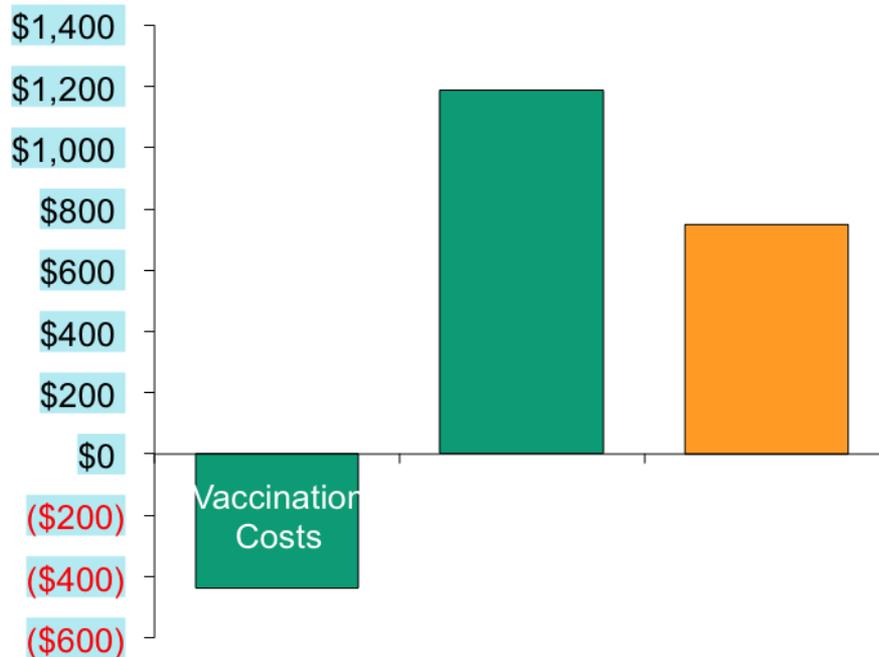
加入青海翡翠丝带活动 共建和谐社会！

参加青海翡翠丝带活动，共同建立一个健康和和谐的社会

- Private -Public Partnership [ALC, China CDC, CFHPC, Qinghai gov, Zeshan Foundation (HK), Ping & Amy Chao Foundation (US)]
- Provide education and free Hep B vaccination for all children in kindergarten and grade schools
- 2006-07: 56,000 children
- 2007-08: scaled up to over 500,000 children in the whole province
- 2,200 schools
- 99.4% 3-shot completion rate

Chen J et al. Int J Public Health, 2011

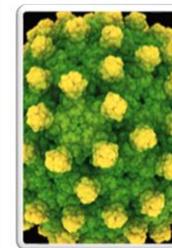
Qinghai Catch-up Vaccination Program and Cost Effectiveness Analysis Convinced the Chinese Government to Scale up the Program Nationwide



Hutton, So, Brandeau. Hepatology, 2009

- Vaccinating the estimated 150 million unprotected children 1-19 yrs of age
 - Prevent 8.2 million new infection, 390,000 from developing chronic infection, and 65,000 deaths
 - 840 million US dollars (5.7 billion RMB) in potential savings
 - **2009: China announced nationwide free catch-up vaccination program for children under 16 years of age**

Eliminate Hepatitis B Mother-to-Child Transmission Project in Gansu and Qinghai Provinces, 2016-2018 (Healthcare Provider Training and Pregnant Women Education)



第一部分

乙肝基本知识



第二部分

医疗机构安全注射
和防止乙肝传播



第三部分

医疗卫生人员如何
与大众和患者交流

Increase Public and Pregnant Women HBV Awareness



Advocacy to Eliminate Hepatitis B Discrimination



Xianzhu Zhang: first person in China to sue the government for hepatitis B job discrimination. Anhui province, China 2003

- Submitted letter to the court in 2003 about hepatitis B facts and hepatitis B status should not be used in job discrimination
- Submitted letter in 2004 to mayor of Suzhou and Suzhou CDC to reverse discriminatory hiring practices. Suzhou became the first city in China to ban hepatitis B discriminatory hiring practices in China

Advocate for laws to ban hepatitis B discrimination

- Opportunity came in 2009: when Chinese government proposed a new law to ban hepatitis B testing for admission to kindergarten that was open to public comment
- ALC and WHO advocated to the government for the law to be expanded to ban discrimination in all schools and workplace
- New law introduced in 2010
 - Eliminate hepatitis B testing requirement for school entry and annual check up
 - Educational institutions cannot use chronic hepatitis B infection as the reason for refusal for admission or dismissal
 - Employers cannot deny employment or terminate employment based on chronic hepatitis B status
 - Hepatitis B testing results must be kept confidential and cannot be shared with employers or others



JOINJADE

employer collaborative

An initiative led by



39 large multinational companies in the US and China **JoinJade:** committed to inclusive workplaces and saving lives!



Contact at ALC: Mie-na Srein

Engage Celebrities in Public Awareness Campaigns to Dispel HBV Misconceptions and Stigma

Beijing International Airport Nov-Dec 2014, Beijing Subway Feb-Mar, 2016



Motivate University Students in China to Educate the Community about Hepatitis B



8th round of funding:

Duration: 2017.11- 2018.4

- Supported 7 teams from 7 universities.
- 6 cities in 6 province
- Onsite activities & online promotion
- Reached 30000+ people



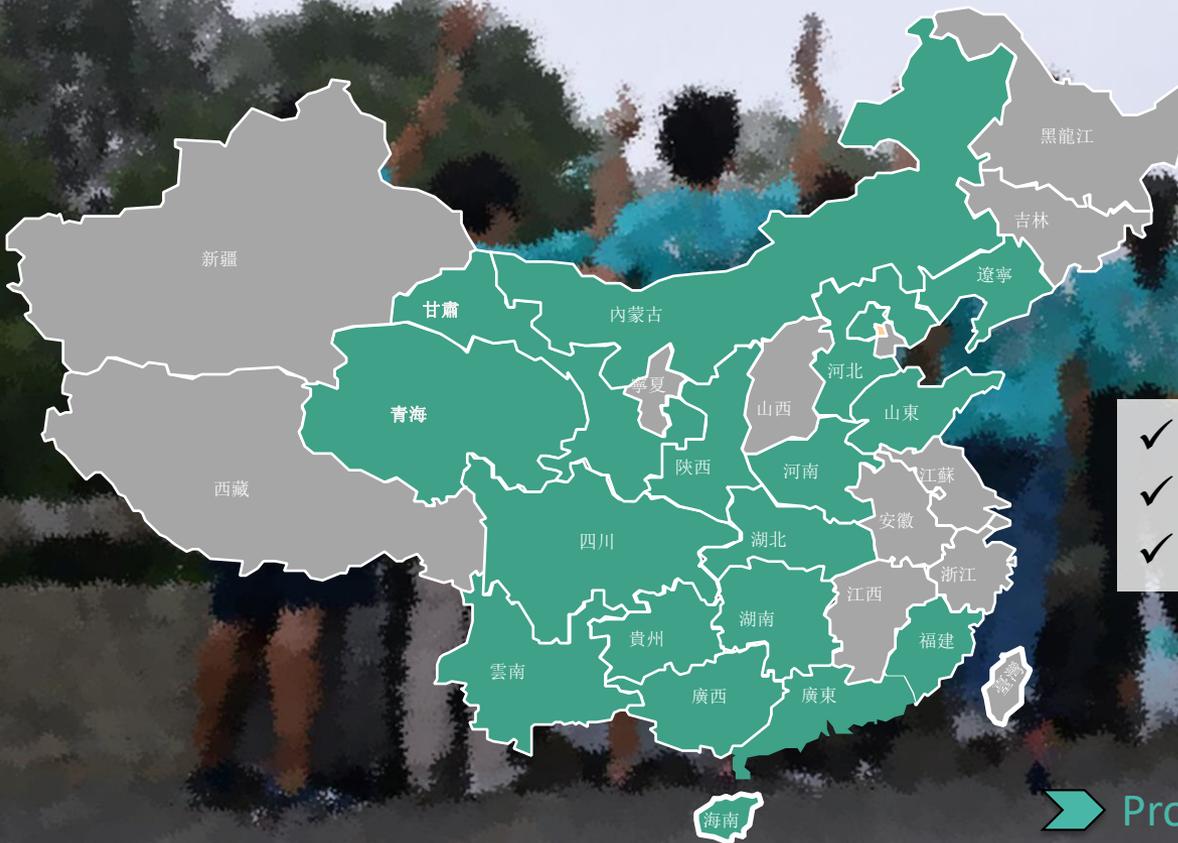
World Hepatitis Day JoinJade Campaigns # Stop Hepatitis B, OK for Life #, July-Aug 2016

- Partners included WHO, China CDC, Beijing CDC
- Reached **90 million** people including 69 million on Weibo
- 8,699 video displays on trains and **168 Beijing subway stations**



Inspire Students in China to JoinJade

---2018. July-Aug

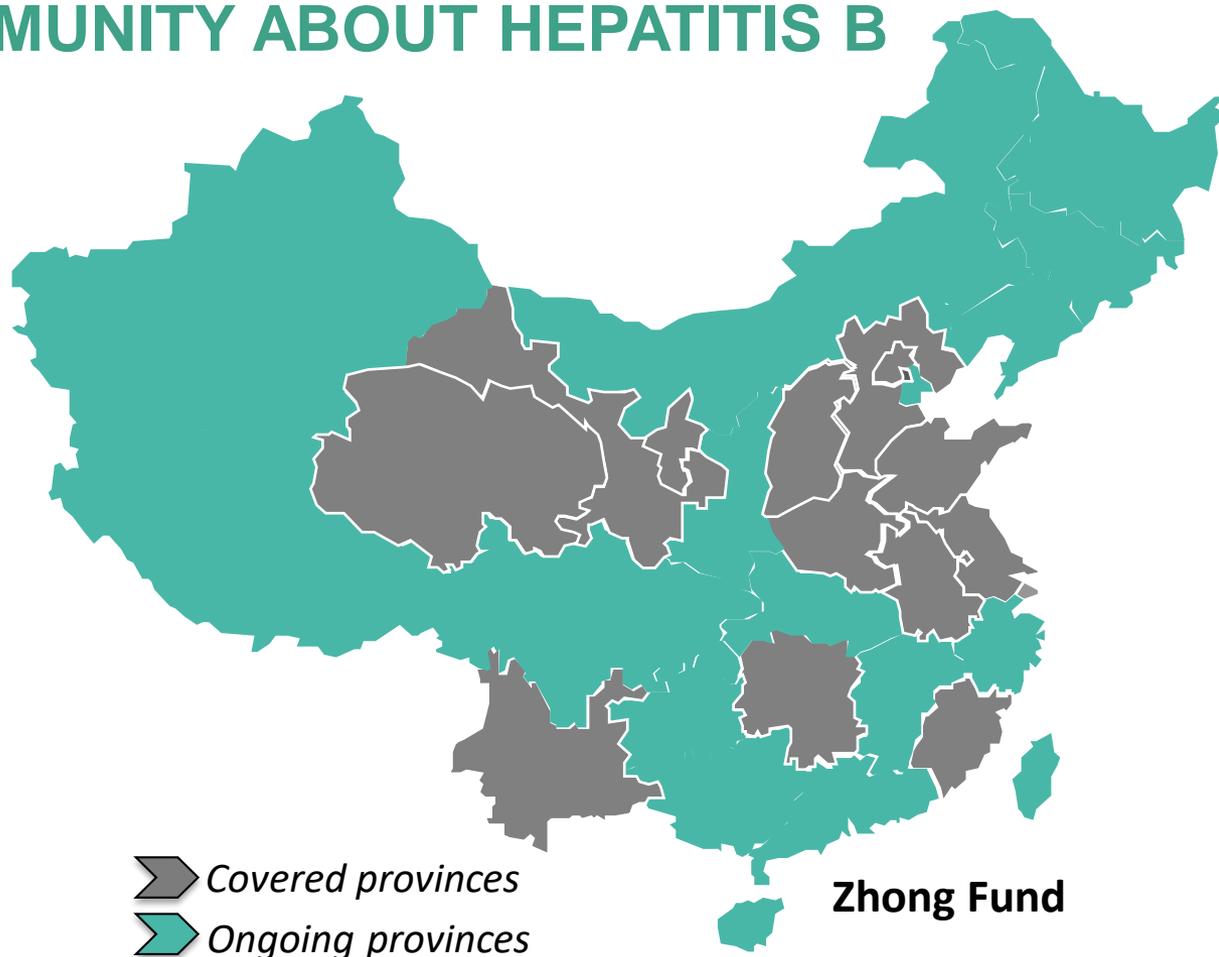


- ✓ Engaged **40** university teams
- ✓ Covered **18** provinces
- ✓ Educated over **10,000+** people

➡ Provinces covered

INSPIRE NON-GOVERNMENTAL ORGANIZATIONS TO EDUCATE THE COMMUNITY ABOUT HEPATITIS B

- ✓ *July-Aug, 2018.*
- ✓ *Covered 19 Provinces*
29 Cities
- ✓ *Reached 30,000+ People*
- ✓ *44 NGOS*



WHO Technical Consultation on a Comprehensive National Hepatitis Programme in China with a Focus on Viral Hepatitis B and C Treatment. Feb 21, 2014, Beijing



Provided Cost Effectiveness Data to Encourage China to Implement a National Treatment Program

- A major concern for Chinese policy makers in launching a national treatment program is antiviral drug cost
 - Conducted a cost-effectiveness study intended for policy makers to show at what drug procurement price would a national treatment program be cost saving, highly cost effective or cost effective
- ALC was congratulated by WHO in 2016, when China successfully negotiated with GSK to reduce tenofovir pricing by 67% - which in our study is considered highly cost effective

RESEARCH ARTICLE

Cost-Effectiveness and Cost Thresholds of Generic and Brand Drugs in a National Chronic Hepatitis B Treatment Program in China

Mehlika Toy¹*, David W. Hutton², Samuel K. So¹

1 Asian Liver Center, Department of Surgery, Stanford University School of Medicine, Stanford, CA, 94305, United States of America, 2 Department of Health Management and Policy, University of Michigan, Ann Arbor, MI, 48109, United States of America

ALC is committed in collaborating with WHO and countries in Asia to Eliminate Viral Hepatitis as a Public Health Problem by 2030



 World Health Organization
Western Pacific Region

FIRST STRATEGIC TECHNICAL ADVISORY COMMITTEE AND INITIAL MEMBER STATE CONSULTATION MEETING ON VIRAL HEPATITIS IN THE WESTERN PACIFIC

28 April 2015, Manila, Philippines

Developed Online Training: to Increase the Capacity of the National Health System in Hepatitis Prevention and Control

Stanford University

Stanford
ONLINE
Lagunita

ABOUT

REGISTER

Sign in

Know HBV And HCV (English, Vietnamese, Mongolian & Chinese)

PLEASE SELECT ONE OF THE COURSES BELOW.

VUI LÒNG CHỌN MỘT TRONG CÁC KHÓA HỌC DƯỚI ĐÂY.

ДООРХ КУРСЫН НЭГИЙГ СОНГОНО УУ.

请在以下课程中选择一门



Eliminating Hepatitis B and Reducing the Burden of Liver Cancer in China is Not a Dream

彻底消除乙肝传播，减轻中国肝癌负担是可行的



A video frame showing Jackie Chan from the chest up. He is wearing a maroon button-down shirt over a white turtleneck with a small green bird logo. He has dark hair and is wearing glasses. He is speaking with his mouth open. The background is a plain, light-colored wall.

Jackie Chan
(Famous Actor/Director)

Hello! I am Jackie Chan.
July 28th is World Hepatitis Day.