



CENTERS FOR DISEASE
CONTROL AND PREVENTION



*National Center for HIV/AIDS,
Viral Hepatitis, STD, and TB
Prevention: NCHHSTP*

Division of Viral Hepatitis

Viral Hepatitis Surveillance

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8 October 2015 Hepatitis B United

Presentation Layout

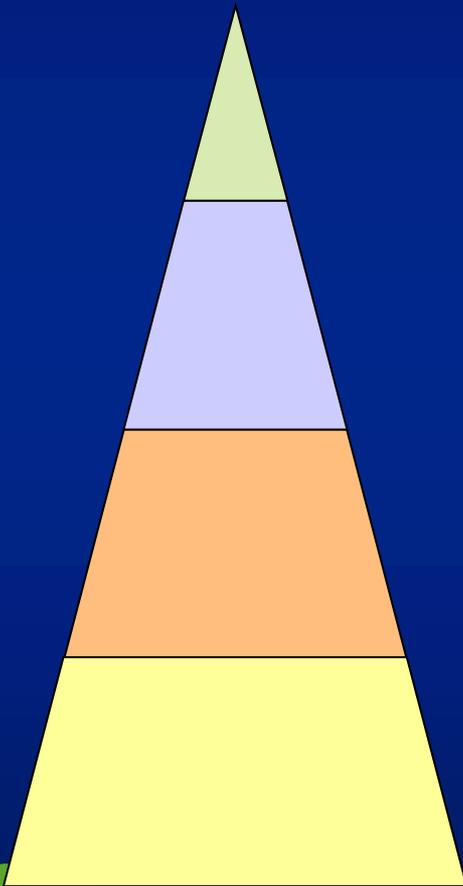
- Purpose of VH Surveillance in the US
- Surveillance Systems used to Conduct Viral Hepatitis Surveillance
- Est Prevalence of Chronic HBV among Asian Americans
- Select CDC-DVH and Grantee Publications and Reports

Viral Hepatitis Surveillance in the United States

OBJECTIVE:

- Monitor incidence and prevalence infection rates
- Estimate burden of disease
- Identify outbreaks for investigation
- Assess sources of infection & monitor changes in transmission patterns
- Evaluate and guide prevention programs and policies

Surveillance Systems for Viral Hepatitis in the United States



National Notifiable Diseases Surveillance System (NNDSS)

Enhanced Hepatitis Surveillance

National Vital Statistics – Cause of Death Files

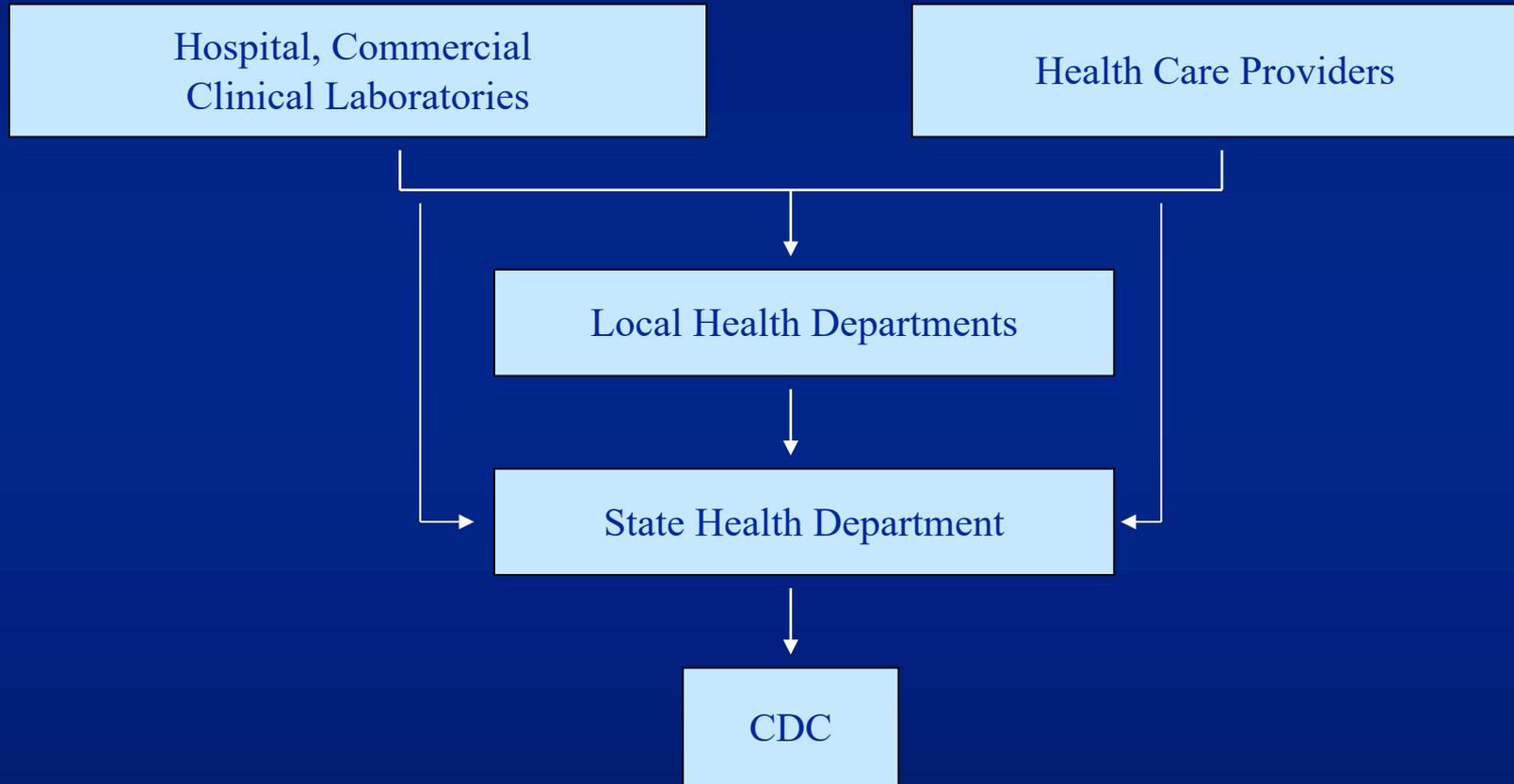
National Health and Nutrition Examination Survey (NHANES)

National Notifiable Diseases Surveillance System (NNDSS)

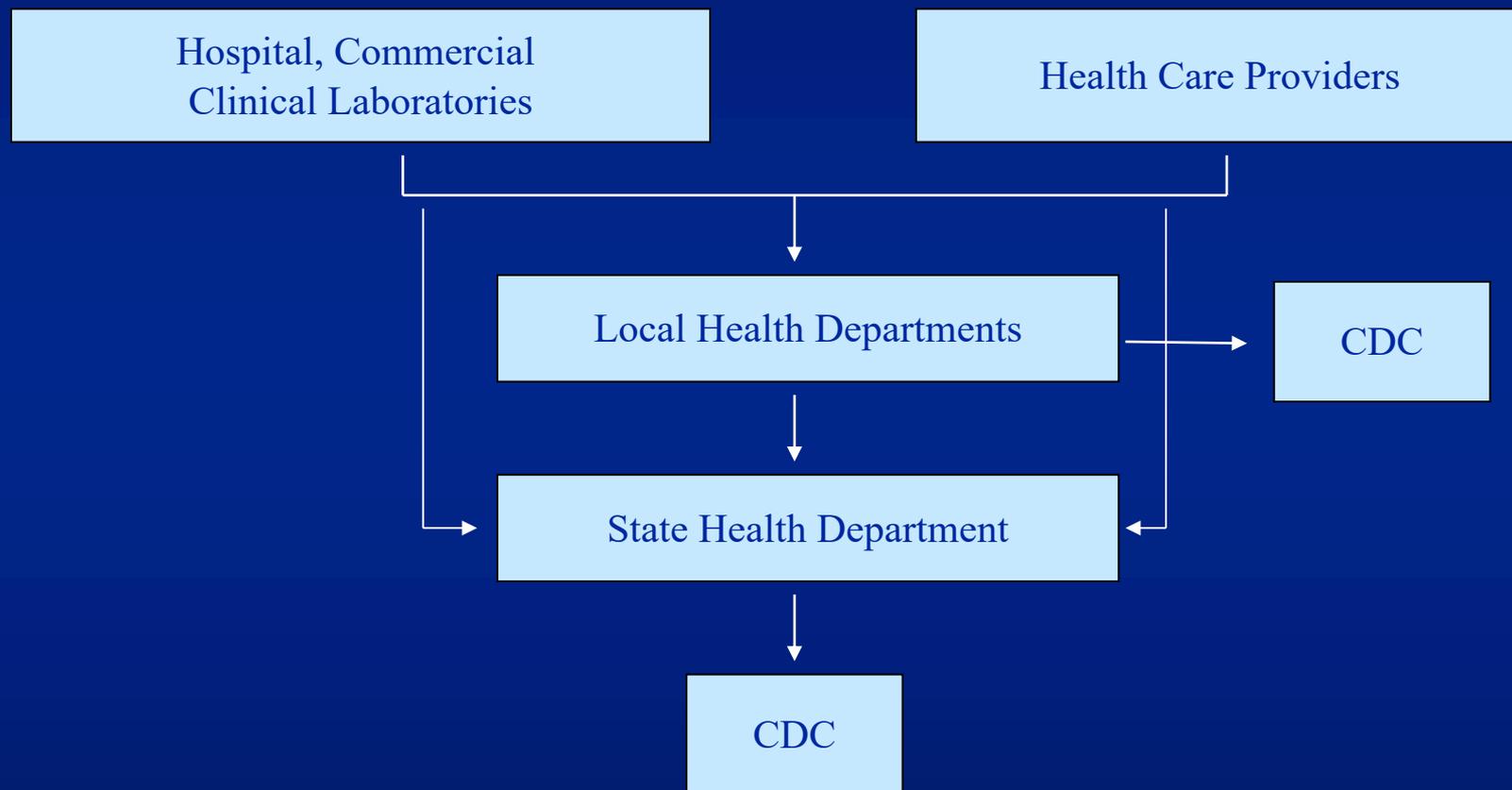
Viral hepatitis among > 70 conditions currently notifiable

- Acute hepatitis A, B and C
- Perinatal hepatitis B infection (1995)
- Chronic hepatitis B and Past or Present C (January 2003)
 - HBV and HCV - 43 states and District of Columbia

NNDSS Data Model



Enhanced Surveillance Data Model



Enhanced Vital Hepatitis Surveillance

- November 2012, CDC funded seven health departments
 - Florida, Massachusetts, Michigan, New York, Washington
 - Philadelphia, San Francisco
- Vision for enhanced surveillance sites
 - Increase capacity to conduct surveillance
 - Improve data quality, completeness, and timeliness
 - Lay ground work for a national viral hepatitis registry
 - Utilize entire CDC case report form to collect enhanced data: demographic, risk factor, serologic testing, immunization status, and possible modes of infection

NHANES Data Collection

- Operated by CDC/NCHS
- Multi-stage probability sample
- Sample size ~ 5,000 to 7,000 per year
- Mobile examination centers
- Oversample of select populations



Prevalence of Chronic HBV in US Households

in

Age-adjusted Prevalence of Chronic, 1988-2012									
Characteristic	NHANES (1988–1994)		NHANES (1999–2006)		NHANES (2007–2012)		Trends Analysis		Prevalence Ratio
	Sample Size	%	Sample Size	%	Sample Size	%	Pvalue ₁	Pvalue ₂	PR
Overall	21,260	0.4	29,828	0.3	22,358	0.3	0.1753	0.2390	1.3 (0.9, 2.0)
Age, years									
6–19	5,679	0.2	12,004	0.05	6,344	0.03	0.0565	0.1582	9.4 (2.1, 41.8)
20–49	8,857	0.4	9,465	0.3	8,118	0.4	0.7942	0.2372	1.1 (0.6, 2.0)
≥ 50	6,724	0.4	8,359	0.4	7,896	0.3	0.4862	0.9564	1.3 (0.6, 2.8)
Race/ethnicity									
Asian American*					929	3.2			

Prevalence of Chronic HBV in US Households

Overall and Age Specific Prevalence of HVC Vaccine Immunity by selected characteristics: NHANES 1988 - 2012

Characteristic	NHANES 1999–2006		NHANES 2007–2012		Prevalence Ratio
	Sample Size	Prevalence, % (95% CI)	Sample Size	Prevalence, % (95% CI)	PR
Overall	29,828	21.9 (21.0, 22.8)	22,359	25.2 (24.2, 26.3)	1.15 (1.09, 1.22)
Race and ethnicity					
Asian American*			929	35.6 (31.5, 39.9)	
6–19			237	42.8 (36.1, 49.7)	
20–49			421	40.3 (34.3, 46.6)	
? 50			271	22.6 (18.7, 27.1)	

Source: Roberts et al. HEPATOLOGY e-Published August 2015

Reported Cases of Chronic HBV

Table 3.4. Reported cases of chronic hepatitis B, by demographic characteristics and laboratory tests

Category	Massachusetts No. (%)	Michigan No. (%)	New York State† No. (%)	Philadelphia No. (%)	San Francisco No. (%)	Washington§ No. (%)	Total No. (%)
Total no. cases	456	471	647	280	732	170	2,756
Race/ethnicity							
Asian/Pacific	177	114	176	98	364	48	977
Islander, NH	38.8%	24.2%	27.2%	35.0%	49.7%	28.2%	35.4%
Black, NH	80 17.5%	98 20.8%	83 12.8%	52 18.6%	9 1.2%	5 2.9%	327 11.9%
White, NH	46 10.1%	124 26.3%	99 15.3%	14 5.0%	16 2.2%	30 17.6%	329 11.9%
Hispanic	30 6.6%	7 1.5%	29 4.5%	12 4.3%	0 0.0%	5 2.9%	83 3.0%

Source: 2013 CDC Viral Hepatitis Surveillance Summary

Select CDC VH Surveillance Publications

- Annual surveillance summaries
[//www.cdc.gov/hepatitis/statistics/index.htm](http://www.cdc.gov/hepatitis/statistics/index.htm)
- Prevalence of Chronic Hepatitis B in US Households, 1988 - 2012
Roberts et al. *Hepatology*, Epub 2015 Aug 6.
- Epidemiology of Acute Hepatitis B in the United States from Population-Based Surveillance, 2006-2011
Iqbal et al. *Clin Infect Dis* 2015 Aug 22;61(4):584-92.
- Causes of Death and Characteristics of Decedents with Viral Hepatitis, United States, 2010
Ly et al. *Clin Infect Dis* 2014 58 (1): 40-49.

Select Grantee Publications/Reports

- The City of Philadelphia Health Department also published a report 'Building a Plan to end Hepatitis C in Pennsylvania'. It was noted that Pennsylvania has the opportunity to make public health history by developing the first state plan to end hepatitis C in the nation.
- The Division of Disease Control, Hepatitis Epidemiology Program published the 'Hepatitis Newsletter' which indicated that there were two major populations of Hepatitis C in Philadelphia, i.e. 'baby boomers' (born 1945-1965) and persons aged 19-35 years old.
- MMWR Publication (2015) 'Identification and Linkage to Care of Person with Chronic Hepatitis C Virus in Five Health Centers: Philadelphia, PA, 2012-2014' (C. Coyle, K. Viner, E. Hughes, H. Kwakwa, J. Zibbell, C. Vellozzi, D. Holtzman).

Select Grantee Publications/Reports

- In 2015, the Michigan Department of Health and Human Services (MDHHS) published 'Michigan Hepatitis C Fact Sheet'. It includes the number of substance abuse treatment admissions and the number of drug overdose deaths due to heroin, 2000-2013.
- Michigan Department of Community Health (MDCH) submitted to MMWR for publication 'The Impact of CDC's Hepatitis C Virus Birth Cohort Screening Recommendations—Michigan, 2009-2013' (J. Coyle, G. Brousseau, J. Mills, E. George, K. Kirkey, S. Eckel, K. Macomber).

Contact Information

- Thank you for inviting me to speak with you today.
- If you need more information about viral hepatitis surveillance at the state level, please contact your state health department.
- If you desire more information about viral hepatitis surveillance at the national level, please send inquiries to:

<http://www.cdc.gov/cdc-info/requestform.html>

or to Dr. Henry Roberts at hroberts@cdc.gov