Placing the Nation on the Path Toward the Elimination of Hepatitis B and Hepatitis C

John W. Ward, M.D.
Division of Viral Hepatitis
Centers for Disease Control and Prevention
CDC- Alaska Native Tribal Health Collaborations to Eliminate Viral Hepatitis as a Health Disparity

Collaborative studies since the 1970s
Division of Viral Hepatitis CDC
Artic Investigations Program CDC

ANTHC Liver Disease and Hepatitis Program
Leadership- Brian McMahon

Studies
- Hepatitis A and Hepatitis B vaccines
  - Effectiveness
  - Long term protection

Chronic hepatitis B, hepatitis C- natural history, care, treatment

43 scientific publications; ten current projects

Brian McMahon

Source: CDC, National Notifiable Diseases Surveillance System (NNDSS)

Reported cases/100,000 population

- American Indian/Alaska Native
- Asian/Pacific Islander
- Black, Non-Hispanic
- White, Non-Hispanic
- Hispanic

Source: National Notifiable Diseases Surveillance System (NNDSS)
Estimated HepB Vaccination Coverage at Birth and at Age 19–35 Months, by Race/ethnicity- 2015

- American /Indian Alaskan Nation
- Native Hawaiian
- White
- Black
- Hispanic
- Asian

https://www.cdc.gov/mmwr/volumes/65/wr/mm6539a4.htm#modalIdString_CDCTable_1
Support viral hepatitis surveillance

Outbreak response- Hepatitis A in the Marshall Islands- 2017

Hepatitis B vaccination

Verification of reaching WPRO goal of <1% HBSAg prevalence among vaccinated cohort
Association between HBV infection and HepB vaccination Coverage by Birth Cohort - Five US Affiliated Pacific Islands

Prevalence of HBV infection

Birth cohort
- Prevalence of HBV infection
- Hepatitis B vaccination rate

1980 birth cohort
- 76.4%

1990 birth cohort
- 8.4%

2000 birth cohort
- 0.2%

Hepatitis B vaccination rate

1980 birth cohort
- 76.4%

1990 birth cohort
- 88.7%

2000 birth cohort
- 97.5%

P<0.0001

Abara W, Vaccine. 2017 Feb 15;35(7):997-1000
Liver and Intrahepatic Bile Duct Cancer Incidence Rates by Race/Ethnicity - 2012

Ryerson AB Cancer. 2016 May 1;122(9):1312-37
Rates of HCV and HBV Mortality by Race/Ethnicity 2015

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>HCV deaths</th>
<th>HBV deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>AI/AN</td>
<td>13</td>
<td>0</td>
</tr>
<tr>
<td>White</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Black</td>
<td>8</td>
<td>2</td>
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<tr>
<td>Hispanic</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Asian/PI</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Overall</td>
<td>6</td>
<td>2</td>
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CDC.gov/hepatitis
Progress of Domestic Plans to Prevent and Eliminate Viral Hepatitis Transmission and Disease

Institute of Medicine

Action Plan for Viral Hepatitis Prevention, Care, and Treatment United States (2011)*

Action Plan for Prevention, Care, and Treatment of Viral Hepatitis (Updated 2014-2016)*

DVH Strategic Plan (2016-2020)

Action Plan for Prevention, Care, and Treatment of Viral Hepatitis (Updated 2017-2020)

NASEM
## Eliminating the Public Health Threat of Viral Hepatitis in the United States - 2030 Targets

<table>
<thead>
<tr>
<th>Target</th>
<th>2030 Targets</th>
<th>Performance Measures</th>
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<tbody>
<tr>
<td>HBV mortality</td>
<td>50% reduction</td>
<td>Diagnose and link to care:</td>
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<tr>
<td></td>
<td>(2015 baseline 1715 deaths)</td>
<td>– 90% of chronic hepatitis B cases diagnosed</td>
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<td></td>
<td>– 90% of those diagnosed brought to care</td>
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<td>Treat: 80% for whom treatment is indicated</td>
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<td>HBV incidence in children &lt; 5 yrs.</td>
<td>Reduce toward zero (2015: 800 children)</td>
<td>85%- HepB birth dose coverage</td>
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<td>75% - perinatal case management</td>
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<tr>
<td>HCV mortality*</td>
<td>65% reduction</td>
<td>Diagnose and cure: 260,000/year 2015-2030 (current # HCV+ persons treated)</td>
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<tr>
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<td>(2015 -19,629 deaths)</td>
<td>Annual new infections</td>
</tr>
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<td>30,240   2015-2016;</td>
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<td>2,730    2025-2030</td>
</tr>
<tr>
<td>HCV incidence*</td>
<td>90% reduction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2015- 0.8/100,000; adjusted 33,900 cases)</td>
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* WHO goals
A NATIONAL STRATEGY FOR
THE ELIMINATION OF HEPATITIS B AND C

• Panel one - HBV and HCV can be eliminated as public health problems in the United States. (released April 2016)
• Panel Two - released March 2017
  – Developed HBV and HCV elimination goals to be reached by 2030
  – Recommended 13 actions to achieve elimination goals
    • Vaccination of vulnerable populations
    • Prevent HCV among persons who inject drugs
    • Access to testing, care, and, treatment
    • Surveillance and strategic data analysis
    • National coordination of elimination
Feasible Strategies Improve HBV Testing and Linkage to care approaches are identifying promising strategies

Implementation Strategies

• Educational curricula
• Training protocols
• Patient navigation services
• Community outreach
• Screening events
• Testing voucher coupons
• Electronic medical record alert tool

Community-Based Strategies, Three Sites, 2014-2016
• 5,940 tested
• 419 (7.1%) HBsAg-positive
HBV Therapies Reduce Disease and Mortality Risks

**Current Therapies**
- 40-50% decrease in cirrhosis, all cause mortality
- Safe and relatively inexpensive ($10-15K/yr US; $450/yr. generic global)
- Therapy is life long, not curative

**Research for New Therapies**
- Target other steps of viral replication
- Interrupt replenishment of cccDNA
- Stimulate immune response
HCV Testing Linked to Care and Treatment

- **Benefits**
  - 74% decline in all cause mortality
  - 85% reduction in liver cancer
  - 93% reduction in liver failure and mortality

- **HCV Treatment**
  - Curative for >90% of treated persons with 8-12 weeks all-oral therapy; pangenotypic
  - Initial market price raised alarms- e.g, $86,000-94,000 in US
    - Prices are declining through negotiation, competition ( $30-$45K)
    - HCV therapies are now cost saving in US
  - Globally, Generic compounds reduce cost – e.g. SOF/LED* USD$ 507-1,014;

HCV Elimination – Georgia

150,000 HCV infected persons - 5.4% of population

Political commitment to elimination

National serosurvey, elimination plan

Partnerships - CDC, Foundation, CDC, Gilead Sciences

Goal - 90% reduction in HCV prevalence

Status -
38,113 started diagnostic evaluation
27,595 have started HCV treatment
98% cure among all oral treatment completions

HCV Elimination Program launch - April 2015
The US is on Track to Achieve WHO Goal for Elimination of HCV Mortality

- Increase affordability of HCV treatment
- Expand HCV testing and linkage to care
- Simplify management for treatment in primary care and outreach settings
- Keep health equity as a guiding principle

Reported cases/100,000 population

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Source: CDC, National Notifiable Diseases Surveillance System (NNDSS)
Combination of Harm Reduction and HCV Treatment to Achieve 90% Reduction in HCV Incidence in the United States

- Syringe Service Programs - 50% decline
- Medication assisted therapy - 50% decline
- SSP + MAT = 71% decline
- SSP + MAT + HCV treatment = 90%

Vikerman P, unpublished data
Need to Expand Access to HCV Prevention for Persons Who inject Drugs

Only 20% of persons 15-29 yrs. with HCV live within 10 miles of a syringe service program; only 270 SSPs in operation.

Status of State Laws Re: HCV Prevention for PWID

Canary L, CID 2017, Campbell C, MMWR 2017,
"As Native people and as Cherokee Nation citizens, we must keep striving to eliminate hepatitis C from our population." Chief Bill John Baker

Goals 85% Diagnosed/ 85% Cured of HCV by 2020

Total Number of Patients 446
Patients Treated by Pharmacists 26 %

Partnership: Gilead Foundation, Univ. OK Health Sciences Center OK , CDC Foundation, CDC
Programs to Move the Nation Toward HCV Elimination

- National recommendation - CDC recommends HepB vaccine within 24 hours of birth – 2017

- HCV elimination
  - Other project for American Indians - Pima Indians AZ
  - Health systems - Veteran’s health system, Fresnius dialysis, Kaiser- Permanente
  - City planning - San Francisco
  - State HCV elimination planning - New Mexico, New York

- CDC seeks to expand assistance to elimination project development
Hepatitis C Elimination Initiative in Alaska

Launched by ANTHC, Alaska Department of Health and Social Services

Community wide perspective

Local working group - correction, Medicaid staff, clinicians, syringe service providers

Planning goals:

- Expanding testing and care to reach all persons at risk
- Focus on key marginalized populations - e.g., corrections, homeless
- Improve primary prevention - syringe service and drug treatment programs
WE BELIEVE THAT THE COMMUNITY – WHEN GIVEN THE PROPER TOOLS – CAN HEAL ITSELF AND TAKE CARE OF ITSELF

Gary Ferguson, Alaska Native Tribal Health Consortium