This program is supported by an educational grant from AbbVie
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**Planning Committee Member**

**Rick Ricer, MD** – Disclosed that he is the reviewer and Professor Emeritus

**Lisa D. Pedicone, PhD** – Nothing to disclose

**Faculty**

All faculty disclosures can be found in your meeting guide.
BREAKING NEWS:
New HCV Clinical Advances

Jordan Feld, MD, MPH
A Few Highlights

• Shorter therapy for (almost) everyone
• Retreatment works
• Barriers to access persist – roadblocks to elimination
• Adherence is important but not everything
• Reinfection – relevant but not a disaster
• Monitoring largely unnecessary
• Leading the pack…an inspiring example
EXPEDITION 8: GLE/PIB x 8 Weeks in Treatment-naïve Patients with Compensated Cirrhosis

Very promising 8w regimen for compensated cirrhosis (except G3)

Excellent Salvage Regimens for the Few Who Fail

SOF/VEL/VOX after NS5A-containing regimen

*Prior Regimens.
**Other SOF Regimens include: SOF + RBV; DCV + SOF; PEG + SOF + RBV.

SOF/VEL/VOX effective all genotypes, G/P effective G1b>G1a for retreatment

Vermehren J et al., AASLD 2018, Abstract 676 and Sulkowski MS et al., AASLD 2018, Abstract 226.
Continuum of Care in PWID

The continuum of care for PWID in Philadelphia 2013-17

- Younger (≤ 35) PWID (N=1,239)
- Older (> 35) PWID (N=1,151)

Poor linkage to care and very low treatment rates, especially in younger PWID

*In HCV Care= seeing a specialist or having another RNA > 180 days from 1st RNA result.
**Treatment= report that treatment initiated or the infection resolved.

Addish E et al, AASLD 2018, Abstract 1632
Barriers Persist – Poor Access for Medicaid Patients in the US (Varies by State)

Start Rates
- ≥70% (n=8)
- 50%<70% (n=6)
- <50% (n=15)

Restrictions:
- Fibrosis
- Sobriety
- Prescriber

Younossi ZM et al, AASLD 2018, Abstract 147.
High SVR in PWID Despite Imperfect Adherence

Anchor Study: Active injection drug use within 3 m treated with SOF/VEL x 12w

Adherence generally high but even missed doses and finishing late had little effect on SVR

Reinfection – It Will Happen

- Drug use persisted after cure but remained stable
- Reinfection more common early after SVR

Reinfection rate among all persons* (N = 199):
- 10 reinfections
- 564 person-years
- 1.8 reinfections per 100 person-years (95% CI: 0.8, 3.3)

Reinfection rate among persons with reported injection drug use* (n = 80):
- 6 reinfections
- 212 person-years
- 2.8 reinfections per 100 person-years (95% CI: 1.0, 6.2)

Grebely J et al., AASLD 2018, Abstract 52.
It’s Not Only About the Liver

SVR improves liver-related mortality but no effect on drug-related mortality

Can We Avoid Blood Tests?

60 G1 or 4 in SHARED study – SOF/LDV x 12w – No lab monitoring

- 88% G4, 12% G1/4 mix (G4R SVR 56%)
- Adherence >90% in all & 88% had 100%
- No AEs attributed to study meds
- No AEs leading to study discontinuation

Will the rest of the world follow suit?

Grant P et al., AASLD 2018, Abstract 54.
Egypt Leading the Way

Ongoing massive screening program → 45M people in 6 months!

Key Components
- Community mobilization
- Free testing (reflex RNA)
- Linkage to care
- Free treatment
- Education campaign
- Prevention

Egypt Leading the Way

June 2016-18 → Test & Treat 12-80 yo in 63 villages in 7 governates of Egypt

Ongoing massive screening program → 45M people in 6 months!

Key Components
- Community mobilization
- Free testing (reflex RNA)
- Linkage to care
- Free treatment
- Education campaign
- Prevention

Summary

• Long road to elimination

• Will require improvements along the entire cascade of care
  – Diagnosis
  – Linkage
  – Treatment
  – Follow-up and prevention

• Barriers remain but lots of tools to overcome them
What Will it Take to Achieve Global Hepatitis Elimination by 2030: Lessons from Country Experiences

Nick Walsh, MD, PhD
Key Highlights – WHO/PAHO’s Work and Focus

- **Convene**
  - Global strategy and targets, monitoring progress

- **Advocate**
  - World Hepatitis Summit, Regional conferences

- **Guide**
  - Normative and policy work

- **Support**
  - Policy uptake in countries, implementation

- **Increase access**
  - Price reporting, pre-qualification, patent landscape

- **Position**
  - Hepatitis response within broader health agenda (Universal Health Coverage)
Global Health Sector Strategy: Eliminate Viral Hepatitis as a Major Public Health Threat by 2030

**Impact Targets**

- Reduction in new infections by 90%
- Reduction in deaths by 65%

**Programmatic Targets**

- 90% of people infected are diagnosed
- 80% of people diagnosed are treated
- 90% coverage of BD and B3 doses (PAHO: 95%)
- 100% of blood products are safe
- 90% of injections in health facilities are safe
Prevalence
257 million people living with HBV
68% in Africa / Western Pacific

Cumulated Incidence
of chronic infections in children
reduced because of immunization

Status of Hepatitis B
Status of Hepatitis C

Prevalence:
71 million infected, all regions

Incidence:
1.75 million new infections / year
(Unsafe health care and injection drug use)
82 Countries Now Have National Plans
12 Countries on Track to Achieve the WHO 2030 Hep C Elimination Target

Australia
Egypt
France
Georgia
Iceland
Italy
Japan
Mongolia
Netherlands
Spain
Switzerland
UK

Source: Polaris Observatory (http://cdafound.org/polaris/ accessed June 14, 2018)
Key Challenges to Achieving Elimination

1. Political commitment
   – Need high level backed by domestic investment

2. High DAA prices
   – Relative to GDP, prices are high in many middle income countries

3. Lack of expansion of national screening strategies
Countries with Patents

Countries without patents and paying high prices

Countries without patents and with “access price” or generics

Countries with “access price” and patents
Targeted Testing Strategies (Chile)

- Chile
  - 35000 with HCV
  - 5800 diagnosed to date

- Issues
  - 80% of people with HCV are 45+
  - Screening is an expense
    - Redundant testing adds costs
    - Diagnostic prices are high

Efficient implementation and improved pricing will make elimination affordable
Efficient Testing Strategies are Needed

- HCV in Latin America & the Caribbean (for example)
  - ~4m individuals with HCV, and > 85% of the population is undiagnosed
  - Population prevalence is ~0.65%

Strategies to reduce the number screened to find 1 HCV case are needed.
Island Challenges

• The Caribbean
  – ~25% of chronic HBV burden in the Americas
  – Ostensibly no access to DAAs
  – High TDF prices
  – Poor access to PCR

• Kiribati (the Pacific)
  – 100,000 people
  – Endemic HBV ~15%
    • But 73% anti-HDV
  – Universal health coverage
  – Birth dose coverage challenges in outlying islands
  – No PCR
  – Very few clinicians
  – TDF treatment initiated in 2018

Decentralization of response will be critical
Steps to Mobilizing Action in Mongolia

- Large public health threat
  - Highly endemic HBV HCV and HDV
  - National insurance scheme (covers 98% of population)
- Active community pressure
- Bipartisan political engagement (critical)
- WHO/CDC/MoH partnership
  - National programmatic assessment (2014)
  - Investment case (2015/16)
  - Calculation of national cascade (2017)
  - Viral hepatitis Laboratory review (2017)
  - Strategic Information review (2017)

Support is ongoing – Mongolia is now a global leader in hepatitis
Brazil Leading on HCV, but Challenges Ahead

- To reach elimination, large screening scale up is required
  - # Dx with HCV viraemia in 2016 was \(~19000\)
  - DAAs cured \(~35000\) in 2016
- However, diagnosis and treatment rates are falling

![Graph showing estimated number of people being tested, diagnosed and treated in the population. Brasil, 2018.](image)

<table>
<thead>
<tr>
<th>Elimination Plan</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of people tested (general population)</td>
<td>9,586,000</td>
<td>13,931,000</td>
<td>15,384,000</td>
<td>30,098,000</td>
</tr>
<tr>
<td>New Diagnoses</td>
<td>30,000</td>
<td>40,000</td>
<td>40,000</td>
<td>40,000</td>
</tr>
<tr>
<td>Treated</td>
<td>19,000</td>
<td>50,000</td>
<td>50,000</td>
<td>32,000</td>
</tr>
</tbody>
</table>

Fonte: DIAHV/SVS/MS.
Operationalizing a Public Health Response to HCV

1. Comprehensive **national planning** for the elimination of HCV infection
2. **Simple and standardized algorithms** across the continuum of care
3. Integration of hepatitis testing, care and treatment with other services
4. Strategies to **strengthen linkage** from testing to care, treatment and prevention
5. **Decentralized services**, supported by task-sharing
6. **Community engagement** and peer support to address stigma and discrimination, and reach vulnerable or disadvantaged communities
7. **Efficient procurement** and supply management of medicines and diagnostics
8. **Data systems** to monitor the quality of individual care and the cascade of care
So What Will It Take?

1. Advocacy at the national level on the public health and economic impact of elimination
2. Political commitment (cross parties)
3. Cheaper medicines and diagnostics
4. Decentralized implementation
5. Measurement of the response
Acknowledgements

- Member States (Brazil, Chile, Mongolia, Kiribati)
- Global hepatitis program
  - Marc Bulterys, Yvan Hutin
- Pan American Health Organization (PAHO)
  - Juliana Vallini
- WHO Regional office for the Western Pacific (WPRO)
  - Polin Chan, Linh-vi Le
- Center for Disease Analysis Foundation
Enhancing Access to HCV Testing and Treatment in Prisons: Lessons Learned from Australia
Alex Thompson, MBBS, PhD, FRACP
WHO Global Targets by 2030

Figure 6. Targets for reducing new cases of and deaths from chronic viral hepatitis B and C infection

Australia is on Track to Achieve the WHO 2030 Hep C Elimination Target
To Reduce Prevalence, High Incidence Groups Should Be Prioritised

Key Features of Australian HCV / DAA Policy

• HCV testing is funded by the national healthcare scheme
• DAAs are funded for **ALL** Australians by the national healthcare scheme
  – Risk-share agreement between government and industry
    • Capped annual government expenditure
    • No cap on number of patients treated per year
      – No restrictions based on liver disease stage or drug and alcohol use
      – Retreatment (including for reinfections) allowed
    – DAAs for prisoners are funded through this scheme rather than the prison budget
• Broad practitioner base
  – General practitioners and nurse practitioners can prescribe DAAs
• Hospital AND community pharmacy dispensing
>58,000 Australians Treated for Hepatitis C
Clearing the Specialist Warehouse

[Bar chart showing the estimated number of individuals initiating treatment in different states/territories]

NSW: New South Wales;
VIC: Victoria;
QLD: Queensland;
SA: South Australia;
WA: Western Australia;
ACT: Australian Capital Territory;
TAS: Tasmania;
NT: Northern Territory

>58,000 Australians Treated for Hepatitis C
Clearing the Specialist Warehouse

>58,000 Australians Treated for Hepatitis C
Clearing the Specialist Warehouse

Hepatitis C drugs not being accessed by thousands of Australians with the disease

Hundreds of thousands of Australians with hepatitis C are failing to access new curative drugs, despite the Government subsidising them at huge cost to the taxpayer.

The trend means the Government is at risk of missing its target to eradicate hepatitis C and of spending far more than necessary on the treatments.

Hepatitis Australia said fewer than half as many people were accessing the direct acting antivirals as they were immediately after they were first listed on the Pharmaceutical Benefits Scheme (PBS) in March 2016.

Modelling HCV Elimination in Australia

- Annual number of people receiving HCV treatment

<table>
<thead>
<tr>
<th>Treatment Scenario</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>Post-2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pessimistic</td>
<td>7,296</td>
<td>32,400</td>
<td>18,510</td>
<td>13,890</td>
<td>13,890</td>
</tr>
<tr>
<td>Intermediate</td>
<td>7,296</td>
<td>32,400</td>
<td>27,770</td>
<td>23,143</td>
<td>18,510</td>
</tr>
<tr>
<td>Optimistic</td>
<td>7,296</td>
<td>32,400</td>
<td>32,400</td>
<td>32,400</td>
<td>32,400</td>
</tr>
</tbody>
</table>

- Status quo: Pre-DAA era scenario
  - Number on treatment kept at 2015 levels

Kwon A, et al. AVHEC 2017
The Key Challenge for Eliminating HCV in Australia Is Now Engagement of Marginalised Individuals Not Currently in Care

To achieve WHO target by 2030:

Australia 4,725 PWID/yr
Victoria 1,160 PWID/yr
Victorian Prisons

- **HCV is common**
  - > 7,000 prisoners, prevalence HCV > 20%
    - HCV incidence amongst PWID ~ 10%/yr
    - > 7,000 prisoners released to freedom annually
  - OST available (no Australian prison has an NSP)
- **Prior to 2016 (pre-DAAs) – HCV treatments = 25/yr**
  - 2 prisons, specialist-led
- 5 maximum security
- 6 medium security
- 6 minimum security
- Prison musters 60 - 1000

• All prisoners have a BBV assessment at reception
• Nurse-led model
  – 2.5 EFT nurse specialists
  – Protocol-driven assessment & management
  – Portable FibroScan x 2
  – Delivers care locally to each prison
    • Minimizes prisoner movement
• Supervising hepatologists
  – 3 part-time hepatologists (0.2 FTE)
  – F2F and via tele-medicine
• Centralised e-medical record (J-Care)
• Government pays for DAAs rather than prison budget
  – Centralised pharmacy distribution
  – Capacity 20+ treatments / week
Victorian State-Wide Hepatitis Program

- All prisoners have a BBV assessment at reception
- Nurse-led model
  - 2.5 EFT nurse specialists
  - Protocol-driven assessment & management
  - Portable FibroScan x 2
  - Delivers care locally to each prison
    - Minimizes prisoner movement
- Supervising hepatologists
  - 3 part-time hepatologists (0.2 FTE)
  - F2F and via tele-medicine
- Centralised e-medical record (J-Care)
- Government pays for DAAs rather than prison budget
  - Centralised pharmacy distribution
  - Capacity 20+ treatments / week
Results: Assessments and Treatments
1st November 2015 – 1st July 2017

- Assessments: N = 1334
- Eligible for treatment: N = 910
- Commenced DAA: N = 865
- SVR12 time point: N = 415
Results: Assessments and Treatments
1st November 2015 – 1st July 2017

Data analysis from initial 415 consecutively treated patients
## First 415 Consecutively Treated Patients: Prisoner Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (mean)</td>
<td>39.5 years</td>
</tr>
<tr>
<td>Male gender</td>
<td>90%</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>68%</td>
</tr>
<tr>
<td>Indigenous</td>
<td>12%</td>
</tr>
<tr>
<td>Body Mass Index (mean kg/m²)</td>
<td>30 [27-34]</td>
</tr>
<tr>
<td>ALT U/L (median, IQR)</td>
<td>88 [55-146]</td>
</tr>
<tr>
<td>HCV RNA IU/mL (median, IQR)</td>
<td>685,000 [192,000-2,616,500]</td>
</tr>
<tr>
<td>HCV Genotype</td>
<td></td>
</tr>
<tr>
<td>1a</td>
<td>44%</td>
</tr>
<tr>
<td>1b</td>
<td>3%</td>
</tr>
<tr>
<td>3</td>
<td>50%</td>
</tr>
<tr>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>6</td>
<td>1%</td>
</tr>
<tr>
<td>LSM kPa</td>
<td></td>
</tr>
<tr>
<td>&lt; 9.5</td>
<td>72%</td>
</tr>
<tr>
<td>9.5 – 12.5</td>
<td>10%</td>
</tr>
<tr>
<td>&gt; 12.5</td>
<td>18%</td>
</tr>
<tr>
<td>Cirrhotic</td>
<td></td>
</tr>
<tr>
<td>Compensated</td>
<td>21%</td>
</tr>
<tr>
<td>Decompensated</td>
<td>18%</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Prisoner Characteristics

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>N = 415</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HBV co-infection</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- HBsAg positive</td>
<td></td>
<td>2%</td>
</tr>
<tr>
<td>- Anti-HBc positive</td>
<td></td>
<td>30%</td>
</tr>
<tr>
<td>- Anti-HBs positive</td>
<td></td>
<td>81%</td>
</tr>
<tr>
<td><strong>HIV co-infection</strong></td>
<td></td>
<td>2%</td>
</tr>
<tr>
<td><strong>PWID</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Ever</td>
<td></td>
<td>94%</td>
</tr>
<tr>
<td>- Month prior to incarceration</td>
<td></td>
<td>68%</td>
</tr>
<tr>
<td>- Age started (median, IQR)</td>
<td></td>
<td>17 [15-21]</td>
</tr>
<tr>
<td><strong>Drug of choice</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Heroin</td>
<td></td>
<td>60%</td>
</tr>
<tr>
<td>- Amphetamines</td>
<td></td>
<td>36%</td>
</tr>
<tr>
<td>- Prescription / other</td>
<td></td>
<td>4%</td>
</tr>
<tr>
<td><strong>OST</strong></td>
<td></td>
<td>55%</td>
</tr>
<tr>
<td><strong>Mental health history</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Self-reported</td>
<td></td>
<td>70%</td>
</tr>
<tr>
<td>- Psychotropic medication</td>
<td></td>
<td>50%</td>
</tr>
<tr>
<td><strong>HCV care</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Never sought specialised HCV care</td>
<td></td>
<td>86%</td>
</tr>
<tr>
<td>- Treatment experienced</td>
<td></td>
<td>6%</td>
</tr>
<tr>
<td>Service Characteristics</td>
<td>N = 415</td>
<td></td>
</tr>
<tr>
<td>-------------------------</td>
<td>--------</td>
<td></td>
</tr>
<tr>
<td>Assessments:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Nurse only contact</td>
<td>82%</td>
<td></td>
</tr>
<tr>
<td>– Telehealth and/or face-to-face with specialist</td>
<td>18%</td>
<td></td>
</tr>
<tr>
<td>Referral to assessment, days (mean, IQR)</td>
<td>48 [17-62]</td>
<td></td>
</tr>
<tr>
<td>Number of prisoner movements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>– 1+ movement while on treatment</td>
<td>27%</td>
<td></td>
</tr>
<tr>
<td>Cirrhosis surveillance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Hepatoma screening</td>
<td>77%</td>
<td></td>
</tr>
<tr>
<td>– Variceal surveillance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Baveno criteria met</td>
<td>83%</td>
<td></td>
</tr>
<tr>
<td>– Baveno criteria not met</td>
<td>17%</td>
<td></td>
</tr>
</tbody>
</table>
HCV Treatment Outcomes
Intention to Treat, n = 415

End of Treatment

- PCR negative: 355
- PCR positive: 11
- Lost to freedom: 60

SVR12

- PCR negative: 278
- PCR positive: 11
- Lost to freedom: 126

Intention to treat
EOT response 86%
SVR12 67%
HCV Treatment Outcomes
Prisoners Who Have SVR12 Result Available, n = 289

- PCR Negative: 278
- PCR Positive: 11
HCV Treatment Outcomes
Prisoners Who Have SVR12 Result Available, n = 289

Per protocol
SVR12  96.2%
HCV Treatment Outcomes
Prisoners Who Have SVR12 Result Available, n = 289

Per protocol
SVR12 96.2%

- 10 Relapses
- 1 Reinfection
Summary

• HCV treatment can be delivered safely, effectively and in high numbers across a network of prisons setting using a nurse-led model of care

• For most prisoners, this is the first time they have engaged with hepatitis C care
What has Worked Well?

• Policy support
  – National HCV strategy, state-based HCV strategies that prioritise prisoners
  – Government reimbursement for testing, DAAs

• Nurse-led
  – 80% do not require medical review

• Decentralised
  – Hepatitis C care is taken TO the prisoners
  • Testing, clinical assessment, elastography, DAAs

• Central EMR / pharmacy dispensing
  – Facilitates prisoner tracking
Conclusion

• The prison system provides a public health opportunity for engaging high risk individuals
  – Individual: identify and treat a curable disease and prevent liver morbidity and mortality
  – Society: prevent transmission and reduce prevalence

• Prison hepatitis programs should be a necessary part of HCV elimination programs
Acknowledgements

Victorian State-wide Hepatitis Program Team
Lucy McDonald, Anne Craigie, Amy Edwards
David Iser, Tim Papaluca

Margaret Hellard

Andrew Lloyd

Michael Levy
Recruiting and Training PCPs in Rural California – One County at a Time

Norah Terrault, MD, MPH
Number of People Screened and Diagnosed from 2013-2016 in the US

- Number screened for HCV antibody increased over 4 year period
- Increase in confirmatory HCV RNA testing (introduction of reflex testing)
- Current rate not sufficient to meet 2030 elimination target

Sulkowski MS et al., AASLD 2018, Abstract 1565.
**Micro-Elimination of Hepatitis C**

- Optimizing HCV care in defined geographical areas
- Nearly 40 million Californians: ~15% of all HCV-infected Americans

- Majority of CA counties are rural
- Distances to urban centers with specialists up to 350 miles
- Frontier counties have limited numbers of PCPs

**Access to HCV providers is a barrier to HCV elimination in CA**
HCV Infection Rate Highest in Rural Northern California

- **14 of the 15 counties** with the highest rates of newly reported HCV cases are in Northern California.
- **33 of 35 counties** in Northern and Central California have reported rates of HCV infection above the state average (>63.3 per 10,000 persons).
UCSF Project ECHO
(Extension for Community Healthcare Outcomes)

- UCSF Project ECHO launched November 2015
- “One to Many” – A proven model to significantly increase access to specialty care
- Hubs & Spokes – ECHO links expert specialist teams at an academic “hub” with primary care providers in local communities – the “spokes” of the model
Wrap-Around Support for Spokes

UCSF Project ECHO:
One Team-to-Many Approach

UCSF HCV ECHO Clinic
Video-Conference Every 2 weeks
Didactic Lectures (CME offered)
Case presentation (by Spokes) and discussion (by Hub)
“Mail-bag”: Patient care tips and best practices based on HCV Voice questions

- Multiple educational options for PCP spokes to provide wrap-around training and support

HCV 101 introduction to HCV In-Person Immersion held quarterly

ECHO SPOKES

HCV Voice (warm line)
1-800 access to liver/treatment specialists for “between clinic” questions
ECHO: Building a Network of Supported and Confident HCV Treaters

Recent focus group quotes:

• “I practice in rural Northern California and we would have to refer our patients with HCV out a hundred, sometimes two hundred miles to be seen. Availability was very limited and patients were having problems with transportation so they were falling through the cracks. Somebody told me about Project ECHO and it’s been phenomenal.”

• “I’m so happy to have professional support finally behind me. For so long being way out here in nowhere and not being able to have somebody that you can call or contact or have education right at hand when handling these complex patients had been so awful. I’m just so relieved and glad to have Project ECHO.”
After our 1\textsuperscript{st} year:

N=52 “Spokes”

HCV providers in 20 California counties….. but not enough in rural Northern California!
Jennifer Slepin, RN: ECHO-Plus outreach liaison in Northern CA

- Increase awareness regarding HCV in the community
- Identify local primary care providers who are potential HCV Champions
- Resource for clinic staff and providers embarking about HCV care
Humboldt: population ~137,000

- Estimated 7,530 county residents were currently infected with HCV
- 290 miles from San Francisco
- One fledgling needle-exchange program; no HCV screening
- 4 HCV providers via ECHO

6-months later:

- 38 HCV providers
- Needle-exchange program offers HCV testing and treatment
- HCV “task force” in Eureka
Nurse: Get tested and get treated

New treatment lends hope to those with Hepatitis C

By Terrance Vestal
Managing Editor

Jennifer Slepin, a registered nurse and outreach liaison for the University of California at San Francisco’s HCV Project ECHO, spent a few weeks in Inyo County meeting with local health care providers about the importance of area residents getting tested for Hepatitis C.

Inyo County Pop’n: 18,546
Other Partnering Options
1:1 Tele-Mentoring

UC Davis Telemedicine Program

- Hepatologist
  Souvik Sarkar
- Pharmacist
  Becky Hluhinach

- Series of shared visits between experts and PCP/patient with progressive transition of HCV management to PCP over time
- Visit is billed by the PCP (not the specialist) to patient’s insurer → PCPs are “compensated” for time spent learning
ECHO-Plus: Improving the Cascade of Care for HCV

#1 Community Outreach Liaison: Promoting HCV awareness and screening

#2 Training using ECHO or Tele-mentoring support

#3 Provision of telemedicine consults

#3 Improve on quality of care
Clinical Management Support Tool (CMST)
CMST: Aid to HCV Providers for Optimizing HCV Care

- Step-be-step guide in HCV care from screening to post-SVR
- Providers “tracker” for clinicians – identifies where patient is within the cascade of care
CMST: Aid to HCV Providers for Optimizing HCV Care

- Provides cues for what needs to be considered at each stage of the care cascade

Counseled on benefits of coffee

Referred to inpatient program
HCV Elimination in Rural California: Lessons Learned

- Community awareness and advocacy are critical
  - Use media to make HCV relevant to the local community
  - Cultivate and actively support local HCV champions

- Consciousness of the time constraints faced by PCPs
  - Options to provide different methods of education (ECHO hub & spoke and tele-mentoring)
  - Tools to streamline HCV care

- Continuity of local provider support over time is important
  - Maintain momentum for HCV testing and treatment even after “Hepcarestream” moves on to another county
New US Tool: MappingHepC.com

- Interactive online resource for chronic hep C epidemiology in US.
- Combined datasets from 2 large US labs
- Includes 17,149,480 individuals tested between 1/2013-12/2016.
- Includes data on antibody screening, HCV RNA + and number treated.
Patients, Primary Care & Civil Society: Critical Partners in Hepatitis Elimination

Su Wang, MD, MPH
12 Years to 2030
ELIMINATE HEPATITIS

The race to elimination by 2030

Commentary and Analysis

What is required to get us across the finish line:

- Improving data
- Closing gaps in prevention
- Public health approach
- Accelerating innovation
- Scaling-up testing and treatment

FINISH

Elimination by 2030
We Won’t Achieve Viral Hepatitis Elimination Without Addressing Health Disparities
Harnessing the Power of People

**STEP 1**

- Identify
- Energise

People living with viral hepatitis

**STEP 2**

- Improve and increase advocacy
- Stop stigma and discrimination
- Improve programme delivery
- Demand access

The power of the millions
ELIMINATION will not be achieved without involving PEOPLE WHO ARE AFFECTED by viral hepatitis.
What Does Civil Society Contribute?

- Advocacy
- Resource mobilisation
- Awareness
- Service design
World Hepatitis Alliance: Our First 10 Years

- **2007**
  - WHA founded

- **2009**
  - Viral hepatitis appears on WHO agenda, for the first time ever following advocacy by WHA

- **2008**
  - First community led World Hepatitis Day

- **2010**
  - Adoption of the first resolution on viral hepatitis (WHNA pushed for it)

- **2011**
  - The first WHO Official World Hepatitis Day

- **2012**
  - WHO launches its Framework for Global Action on viral hepatitis

- **2013**
  - WHA and WHO launch the Global Policy Report on the prevention and control of viral hepatitis

- **2014**
  - WHA joins WHO Director-General’s STAC-HEP on hepatitis
  - Second WHO Resolution (WHA drafted it)

- **2015**
  - WHA launches the World Hepatitis Summit Glasgow, Scotland

- **2016**
  - The World Health Assembly endorsed the Global Health Sector Strategy (GHSS)
  - **2030 Goal of Viral Hepatitis Elimination**
  - WHA launches NOhep
  - NOhep Medical Visionary Program launched
  - WHO launches Global Hepatitis Report
  - 2nd World Hepatitis Summit Sao Paulo, Brazil
What Is NOhep?

• A global awareness raising & advocacy movement
• Created by the World Hepatitis Alliance in response to WHO’s Viral Hepatitis Strategy (GHSS)

• A Multi-Stakeholder Movement: For patients, organizations, governments, & medical professionals to advance efforts to eliminate viral hepatitis
• To be a widely recognized logo for the viral hepatitis movement, like red ribbon for HIV/AIDS
• The 3 green dots represent life-changing progress/movement towards viral hepatitis elimination
How Can Hepatologists & Specialists Help

- Help with de-siloing of services, expanding viral hepatitis screening & care
- Educate, advocate, be a mentor
- Be leaders in simplifying guidelines that can be adopted by primary care providers & frontline workers
- Activate your patients & the community
# Many Guidelines for Hepatitis B Treatment: Which to Follow? If We Don’t Simplify, Patients Won’t Get Treated

<table>
<thead>
<tr>
<th>Guideline</th>
<th>HBeAg+</th>
<th>HBeAg-</th>
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<tbody>
<tr>
<td></td>
<td>HBV DNA IU/mL</td>
<td>ALT U/L</td>
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<tr>
<td></td>
<td>&gt;20,000</td>
<td>&gt;2 x ULN‡ or significant histological disease</td>
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<td>AASLD 2018</td>
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<tr>
<td>AATA 2018</td>
<td>&gt;2,000</td>
<td>&gt;ULN</td>
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<tr>
<td>EASL 2017</td>
<td>≥2000</td>
<td>&gt;ULN and/or at least moderate liver necroinflammation or fibrosis</td>
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<tr>
<td></td>
<td>≥20,000</td>
<td>&gt;2 x ULN irrespective of fibrosis</td>
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<tr>
<td>JSH 2017</td>
<td>≥2,000</td>
<td>&gt;ULN†</td>
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<tr>
<td>APASL 2015</td>
<td>≥20,000</td>
<td>Varies</td>
</tr>
<tr>
<td>US Algorithm 2015†</td>
<td>≥2000</td>
<td>&gt;ULN</td>
</tr>
</tbody>
</table>

1If patients with HBV DNA ≥ 2000 IU/mL and elevated ALT without fibrosis do not undergo treatment, monitor HBV DNA and ALT every 3–6 months.

2Liver biopsy Stages 1–3, Grade 1–3; and/or Risk Impact Score ≥3; 3ALT ULN: Males 35 U/L, females 25 U/L; 4ALT ULN: 31 U/L.


Terrault NB et al. Hepatology. 2018; Published online February 5, 2018: doi:10.1002/hep.29800;
Testing, Evaluation, and Monitoring of Hepatitis C

The following pages address testing, evaluation, and monitoring of patients with HCV before, during and after antiviral therapy.

- HCV Testing and Linkage to Care
- When and in Whom to Initiate HCV Therapy
- Overview of Cost, Reimbursement, and Cost-Effectiveness Considerations for Hepatitis C Treatment Regimens
- Monitoring Patients Who Are Starting HCV Treatment, Are on Treatment, or Have Completed Therapy
- HCV Resistance Primer
5 PRINCIPLES OF A NOHEP MEDICAL VISIONARY

1. EDUCATE PEERS
   - You educate peers that elimination of viral hepatitis is achievable.
   - You educate peers on medical and public health advances, ensuring they understand that the control of hepatitis B and elimination of hepatitis C are possible and achievable through a combination of prevention, testing, and treatment initiatives and that they have an active role to play in the fight.

2. RAISE AWARENESS
   - You raise awareness amongst key audiences of viral hepatitis as a human and economic issue, and the urgent need to act.
   - You raise awareness of the burden of viral hepatitis, as well as the positive impact of diagnosis and treatment, amongst peers, partners, and the public. Through sharing of data and stories, you create both motivation and a sense of urgency.

3. ENABLE OTHERS
   - You enable other medical professionals to play their role in eliminating viral hepatitis.
   - You support medical professionals—at all levels—to help them understand the role they can play in combating viral hepatitis.

4. FACILITATE COLLABORATION
   - You facilitate collaboration between key stakeholders to advance viral hepatitis elimination efforts.
   - You engage with key communities to share content, resources and best practices that will improve viral hepatitis elimination efforts—entering into meaningful partnerships to share and advance the NOhep principles.

5. VOCAL AMBASSADOR
   - You are an ambassador for all efforts to eliminate viral hepatitis, promoting action and driving change that will help achieve ambitious goals.
   - You translate global goals into relevant local actions, engage with audiences within and outside of the medical community, and champion hepatitis elimination in your local community and networks, in all that you do.

The 5 Principles of a NOhep Medical Visionary aim to empower medical professionals to play a significant role in achieving viral hepatitis elimination. You can learn about how to achieve these Principles in the NOhep Visionaries Guide for Medical Professionals.


https://t.co/LbS4MXNNcO
Medical Professionals as Advocates

• Sign up to NOhep Visionaries Programme at www.NOhep.org

• A global network of medical professionals leading efforts to eliminate viral hepatitis

• Get updates on global progress, get resources (infographics, slidesets)
No decision about me, without me
Panel Discussion/Q&A