HCV: how do we reach elimination from a clinicians perspective

A/Professor Gail Matthews
WHO global hepatitis elimination goals by 2030

“Elimination – a reduction in HCV incidence and HCV-related mortality to a level that are no longer a public health concern”

Testing to go from 20% to 90% and Treatment from 7% to 80% from 2015-2030
What is the current reality?

HCV Elimination Targets
2017

On Track  Working Towards  Not On Track

CDA 2017: Polaris Observatory (http://centerforda.com/polaris/)
Australia: initial DAA uptake encouraging

Around 60,000 DAA treated = 26% chronic HCV
but DAA treatment numbers have declined

DAA initiations/month

….despite universal access
How does the clinician help achieve elimination?
The concept of ‘micro-elimination’

Drug and alcohol clinic

HIV positive GBM

Tertiary hospital clinic (ALD)

Indigenous health services

Prisons

Inner city GP

Dialysis units

Haemophiliacs
1. Find your patient
2. Diagnose your patient
3. Link your patient
4. Treat your patient
5. Re-treat your patient
6. Protect your patient
Georgia: Elimination progress

HCV Cascade as of March 31, 2018

- HCV infected (estimated): 150,000 (100%)
- Diagnosed (HCV RNA+): 48,764 (33%)
- Initiated treatment: 45,334 (30%)
- Assessed for SVR: 29,620 (20%)
- Cured: 29,090 (19%)

Percentage progress indicators are as follows:
- 32.5% for diagnosis
- 93.0% for treatment initiation
- 65.3% for SVR assessment
- 98.2% for cure
Diagnosis rates by country

Dore GJ et al, J Viral Hep 2014
Finding your patient…..

• **Universal (mass) screening**
  • High prevalence, high risk populations
  • Eg: Drug and alcohol clinic, prisons

• **Cohort screening**
  • Large populations, semi-targeted approach
  • Eg “baby boomer 1945-1965” screening US

• **Risk based (targeted) screening**
  • Low prevalence, ‘case finding’ approach
  • Eg: Primary care practice
This may need innovative approaches

Kombi Clinic, Brisbane
Community PWID and homeless hepatitis C clinic

Queensland Injectors Health Network: Community-based PWID hepatitis C services

Kirketon Road Centre, Sydney
Community health clinic: PWID hepatitis C clinic

Liver Life

QuHN
1. Find your patient
2. Diagnose your patient
3. Link your patient
4. Treat your patient
5. Re-treat your patient
6. Protect your patient
The long journey to an HCV diagnosis....

Visit #1: Anti-HCV antibody (Physician)
Visit #2: Phlebotomy (Phlebotomist)
Visit #3: Receive diagnosis (Physician)
Visit #4: Phlebotomy (Phlebotomist)
Visit #5: Receive diagnosis (Physician)

Advances in diagnostics and point-of-care testing

Rapid diagnostic tests

Dried blood spot testing

Point of care and random access HCV RNA testing
Moving to a single-visit hepatitis C diagnosis

Grebely J, et al
Exp Rev Mol Diag 2017

Visit #1

Anti-HCV antibody (Physician)

Visit #2

Phlebotomy (Phlebotomist)

Visit #3

Receive diagnosis (Physician)

Visit #4

Phlebotomy (Phlebotomist)

Visit #5

Receive diagnosis (Physician)

Rapid anti-HCV antibody test (Health care worker)

Rapid anti-HCV antibody test and HCV RNA and diagnosis (Health care worker)

Central Lab
Antibody test 1-2 weeks

Central Lab
RNA test 1-2 weeks

Central Lab
Antibody test 1-2 weeks

Increased time, visits and lost of follow up

What is important for your population?

- Removing need for phlebotomy?
- Having an ‘in-field’ test?
- Rapid mass AB screening?
- Reducing time from testing to linkage?
- Immediate treatment at first point of access?
Cirrhotic or not?

APRI < 1.0 = High NPV

Platelets < 90 = portal hypertension
1. Find your patient
2. Diagnose your patient
3. Link your patient
4. Treat your patient
5. Re-treat your patient
6. Protect your patient
Australia: Increasing prescriber base

- Other physicians
- General Practitioners
- Other specialists
- Infectious Diseases Physicians
- Gastroenterologists

No need for ‘specialists’ in most cases

Real World Efficacy of Antiviral Therapy in CHC (REACH-C cohort): Australia

Yee et al, GHS, Toronto 2018
No need for ‘specialists’ in most cases

<table>
<thead>
<tr>
<th>Clinic Type</th>
<th>SVR12 Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specialist Liver Clinic</td>
<td>96.6%</td>
</tr>
<tr>
<td>General Practice</td>
<td>95.1%</td>
</tr>
<tr>
<td>Sexual Health Service</td>
<td>96.2%</td>
</tr>
<tr>
<td>Community Health Clinic</td>
<td>99.6%</td>
</tr>
<tr>
<td>Drug and Alcohol Service</td>
<td>98.4%</td>
</tr>
<tr>
<td>Other/Unknown</td>
<td>97.4%</td>
</tr>
</tbody>
</table>

Real World Efficacy of Antiviral Therapy in CHC (REACH-C cohort): Australia

Yee et al, GHS Toronto May 2018
How to broaden access to HCV services?

- Implement HCV care services in settings where people are already accessing other services (e.g. drug treatment clinics, community clinics, prisons, NSPs)

- Outreach by specialists and/or nurses from tertiary-care hospitals

- Education and training of providers in the community to enable broadened prescribing (e.g. drug and alcohol specialists or trained general practitioners)

- Patient- or peer-navigators to facilitate linkage between community and hospitals
1. Find your patient
2. Diagnose your patient
3. Link your patient
4. Treat your patient
5. Re-treat your patient
6. Protect your patient
Georgia: Elimination progress

HCV Cascade as of March 31, 2018

- HCV infected (estimated): 150000 (100%)
- Diagnosed (HCV RNA+): 48764 (33%)
- Initiated treatment: 45334 (30%)
- Assessed for SVR: 29620 (20%)
- Cured: 29090 (19%)
Evolution of HCV therapies

GLE/PIB
Non-cirrhotic
Cirrhotic

PEG-IFN/RBV/SOF
SOF/VEL
SOF/LDV
SOF/DCV
PTV/OMV/DSV/RBV
EBR/GZR

PEG-IFN/RBV/SMV

PEG-IFN/RBV/TVR

PEG-IFN/RBV/BOC

PEG-IFN/RBV

IFN/RBV

IFN

Efficacy

Tolerability

48 weeks
24-48 weeks
24 weeks
12 weeks
8 weeks

Dore GJ & Feld J. CID 2015 (revised)
SVR outcomes in HIV-HCV are similar to HCV

Factors generally associated with failure:
cirrhosis, GT3, treat experience, black race

Afdhal, NEJM2014; Naggie, CROI2015; Feld, NEJM2014; Rockstroh, WAC2014; Wyles, CROI2015; Zeuzem, ILC2015; Rockstroh, ILC2015; Poordad, ILC2015
1. Find your patient
2. Diagnose your patient
3. Link your patient
4. Treat your patient
5. Re-treat your patient
6. Protect your patient
Reinfection will occur – especially in the early years

- Impact of different HCV treatment scale-up levels
Treatment as prevention is not enough to achieve elimination
1. Find your patient
2. Diagnose your patient
3. Link your patient
4. Treat your patient
5. Re-treat your patient
6. Protect your patient
WHO goals also focus on prevention

<table>
<thead>
<tr>
<th>TARGET</th>
<th>Baseline</th>
<th>2020</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Needle/syringe per person per year in PWID</td>
<td>20</td>
<td>200</td>
<td>300</td>
</tr>
</tbody>
</table>
Plan your program now
HIV-HCV may be the first to achieve ‘micro-elimination’

Martinello et al, EASL 2018
Acknowledgements

UNSW Sydney
Prof Greg Dore
A/Prof. Jason Grebely
Dr. Behzad Hajarizadeh
Dr. Tanya Applegate
Dr. Marianne Martinello
Ms. Pip Marks

Collaborators
Prof. Margaret Hellard (Australia)
Dr. Joe Doyle (Australia)
Prof. Alex Thompson (Australia)
A/Prof. Natasha Martin (USA)
Prof. Peter Vickerman (UK)
Prof. Matt Hickman (UK)
Dr. Homie Razavi (USA)
Ms. Tracy Swan (USA)
Dr. Philip Bruggmann (Switzerland)
Prof. Olav Dalgard (Norway)
Prof. Julie Bruneau (Canada)
Dr. Jordan Feld (Canada)