Hepatitis C Elimination:

Australia’s progress

Margaret Hellard
Burnet Institute, Melbourne
Disclosures

- I receive fellowship support from the National Health and Medical Research Council (Australia).
- The Burnet Institute receives infrastructure support from the Victorian Government Operational Infrastructure Fund.
- Gilead Science
- Abbvie
- BMS
Overview

- **HCV epidemiology**  - a brief overview

- **Elimination**
  - WHO elimination targets
  - Why HCV elimination is possible in theory

- **Australia’s progress to date**

- **What needs to be done to achieve our elimination targets**

- **What work has started to help achieve our elimination targets**
HCV epidemiology – total HCV infections

- Total global prevalence - anti-HCV 1.6% or 110 - 130 million infected – mostly in adults
- RNA positive - 1.1% ~ 80 million viraemic infections
- Estimated annual deaths – 800 million – and likely to increase if nothing changes
People who inject drugs and hepatitis C infection

- In high income countries – people who inject drugs (PWID) are at greatest risk of HCV infection

- Ongoing transmission is driven by this group

- PWID are highly marginalised and stigmatised; activity is criminalised in most countries
Australia - HCV cascade of care pre DAA

Figure 1: Estimates of the care cascade for chronic HCV infection in Australia in 2014

Increasing burden of disease and cost

Sievert W et al. *Journal of Gastroenterology and Hepatology* 2014
Proposed WHO targets for reducing new infections and stopping deaths

- **New Infections**
  - 2015: 8 million
  - 2030: Expected to reduce to 2 million (65% reduction)

- **Deaths**
  - 2015: 1.5 million
  - 2030: Expected to reduce to 0.5 million (65% reduction)

- **Hepatitis B + C**
  - 2015: 6 million
  - 2030: Expected to reduce to 0.6 million (90% reduction)
Why HCV elimination is possible

Non-SVR infected PWID

Chronically infected PWID

Acutely infected PWID

Spontaneous clearance

Uninfected PWID

Antiviral treatment

Allow for re-infection

New PWID

Cease/die

Infection

Prevention impact results: prevalence reductions at 10 years

Martin et al. J Hep 2011
Why HCV elimination has become achievable

Treatment with direct acting antivirals without pegylated interferon

Simpler, safer and more effective
Can we achieve elimination by 2030?

Only possible if all people with HCV infection can access to DAAs – including PWID
HCV related liver disease among current and former PWID in Australia
Projected outcomes 2015-2030 under different treatment scenarios

Scott et al – Gut 2016
HCV prevalence remains at over 30% in 2030 if only treat advanced disease

Scott et al – Gut 2016
Treating PWID and advanced disease (for only five years) – stop deaths but also HCV prevalence < 10%
Australia

- Available through PBS from 1 March 2016
  - Available to everyone regardless of level of fibrosis or how you became infected or whether you currently inject drugs
  - Treatment available in tertiary hospital, community settings and prisons
Victorian elimination targets for hepatitis C – hopefully will have national elimination targets in our next national strategy.

**Our vision**

By 2030 Victoria will eliminate hepatitis C as a public health concern and eliminate stigma and discrimination associated with the disease.

**Priority outcomes for 2030**

- The proportion of people experiencing and reporting hepatitis-C-related stigma and discrimination will be: **0%**
- Between 2016 and 2030, the number of new transmissions of hepatitis C will be reduced by: **90%**
- The proportion of all people living with chronic hepatitis C who are diagnosed will be: **90%**
- The proportion of people living with chronic hepatitis C who are cured of the disease will be: **90%**
Number of people who have commenced HCV treatment in Australia

Figure 2: The estimated number of individuals initiating HCV DAA treatment in each month (bars) during March to July 2016. The red line represents the cumulative treatment initiation numbers.
What is not clear is how many of these people are PWID.

Treating over 4000 PWID Australia wide each year is not going to happen by chance.

Need to engage with PWID
The Eliminate C Study

Treat 58/1000 PWID – an estimated 4636 PWID in Australia – annually – prevalence falls to less than 10%
Objectives of EC Partnership:

- To assess the **feasibility** of treating 1,160 PWID annually in Victoria through the community nurse-led model;
- To measure the **impact** of treating approximately 1,160 PWID annually for three years on HCV prevalence in Victoria; and
- To use our results to **inform HCV elimination models** in Australia and globally

This will be done in partnership with the Department of Health and Human Services Victoria (DHHS), Justice Health Victoria, Gilead Sciences and various service providers and community organisations.
The role of the injecting network on hepatitis C treatment and prevention.

Hellard et al. Hepatology 2014
Hellard et al. JECH 2016
Different treatment strategies – including treat your friends strategy

Treatment Strategy Using Network-Based Approach

Treat highest degree first

Treat most uninfected neighbours first

Treat least infected neighbours first

Treat using bring your friends strategy

= HCV RNA⁺  = HCV RNA⁻
p = primary  S = secondary
Treating injecting networks

Modelling the impact of treatment on prevalence at 10 years; 80% SVR

Prevalence per 1000 at end of 10 years

Prevalence per 1000 PWID

TREATMENT STRATEGY
S1 HIGHEST DEGREE FIRST
S1 HIGHEST NUMBER OF UNINFECTED NEIGHBOURS FIRST
S3 LOWEST NUMBER OF INFECTED NEIGHBOURS FIRST
S4 RANDOM
S5 BRING YOUR FRIENDS
S6 NO TREATMENT

COVERAGE 15 PER 1000 PWID PER YEAR
COVERAGE 25 PER 1000 PWID PER YEAR
COVERAGE 50 PER 1000 PWID PER YEAR

Hellard et al Hepatology 2014
The **PRIME Study** is a randomised trial assessing the optimal model of HCV care

Participants attending Primary Healthcare Centre randomised to receive HCV treatment in community or hospital setting

**Aims**

- To measure treatment uptake
- To measure community viral load (taking into account failure to attending hospital care)
- To show community care equivalent to hospital care
Continued health promotion efforts

THE NEW HEP C TREATMENTS
TALK TO YOUR DOCTOR, NURSE OR CLINIC ABOUT GETTING READY FOR TREATMENT

- HARVONI FOR GENOTYPE 1 95% OF PEOPLE CURED
- SOVALDI & IBAVYR FOR GENOTYPE 2 95% OF PEOPLE CURED
- SOVALDI & DAKLINZA FOR GENOTYPES 1 & 3 95% OF PEOPLE CURED
- VIEKIRA PAK SOMETIMES WITH REBETRON FOR GENOTYPE 1 95% OF PEOPLE CURED
Social marketing to inform campaign resources

Implementation phase: four clinics; one day per week for four weeks (with peer-based support), with subsequent clinical follow-up

95% reported that FibroScan® was acceptable

60% returned for post-FibroScan® assessment by a nurse/specialist

The Co-EC Study

Over 75% of all HIV-infected GBM in Victoria - 3 high case load GP clinics, Alfred, RMH and MSHC
Nurse led model of care

**Diagnosis**
Nurse to educate and increase testing; data used to target individuals for testing

**Assessment**
Nurse to educate, assess liver health, counsel regarding transmission

**Treatment**
Nurse to supervise in conjunction with prescribing physician; educate local workforce

**Cure and surveillance**
Monitoring participant for reinfection; population for change in epidemiology
Establish a database of HIV/HCV in Australia: surveillance and samples
Treatment as prevention: SToP-C

Surveillance and Treatment of Prisoners with Hepatitis C (SToP-C)

A partnership project to investigate the feasibility of HCV treatment as prevention in the prison setting
Stigma and discrimination

“THE WAR ON DRUGS HAS BEEN AN UTTER FAILURE.”
- BARACK OBAMA 1/21/04

#ENDTHEWARONDRUGS
GlobalGrinal
Elimination of hepatitis C – requires a strategic multipronged approach

- Increased testing – including point of care
- High quality harm reduction
- Increased access to treatment
- A vaccine
- Reduction in stigma and discrimination
Acknowledgements:

**Burnet Institute and Alfred Hospital**
- Joe Doyle, Amanda Wade, Nick Scott, Alisa Pedrana, Paul Dietze, Peter Higgs, Rachel Sacks Davis, Emma McBryde, David Iser, David Wilson and all the field teams and others in the Viral Hepatitis Group and Drugs and Alcohol Group

**St Vincent’s Hospital** – Alex Thompson, David Iser

**Kirby Institute** – Greg Dore, Andrew Lloyd, Jason Grebely, Gail Matthews and team

**Bristol University & UCSD** – Peter Vickerman and Natasha Martin

**WHO** – Stefan Wiktor, Philippa Easterbrook and the Viral Hepatitis team