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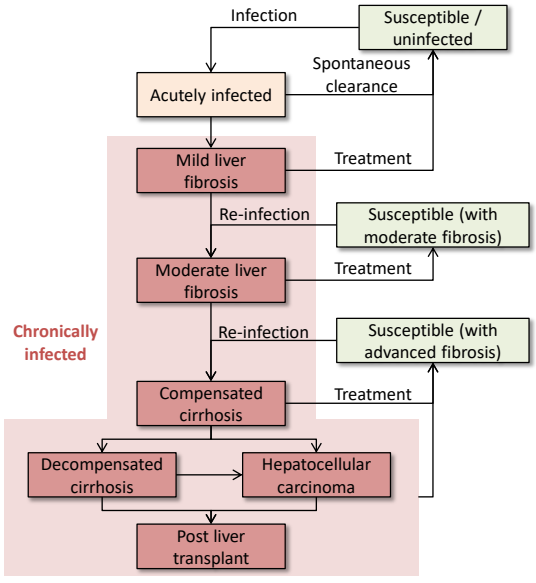
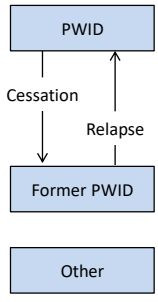
Reaching Hepatitis C Virus Elimination Targets Requires Interventions to Enhance the Care Cascade

Nick Scott
International Network on Hepatitis in Substance Users
September 2017

What is a mathematical model?





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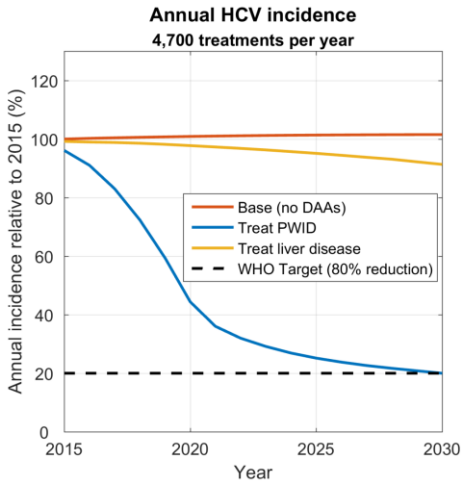
Modelling: elimination is possible



- In Australia, treatment scale-up is required among PWID to reach the WHO's incidence reduction target.
- Targeting treatments is necessary.

Scott et al. *Gut* 2017

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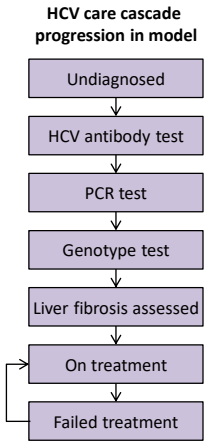
From theory to practice: treatment scale-up and the cascade of care

- Once infected, people require:
  - Antibody test (to determine Ab+)
  - PCR test (to determine RNA+, i.e. active infection)
  - Genotype test (to determine treatment protocol)
  - Liver disease test (to assess risks)



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From theory to practice: treatment scale-up and the cascade of care

- Once infected, people require:
  - Antibody test (to determine Ab+)
  - PCR test (to determine RNA+, i.e. active infection)
  - Genotype test (to determine treatment protocol)
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Not required in future?

Not required in future for people with APRI < 1?

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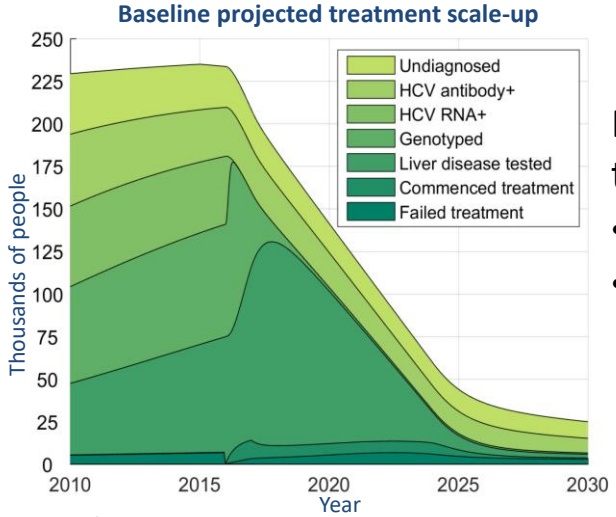
Projected impact of treatment scale-up: people living with HCV



Scott et al. *IJDP 2017*

Based on current treatment uptake:

- ~230,000 in 2015
- ~24,000 by 2030

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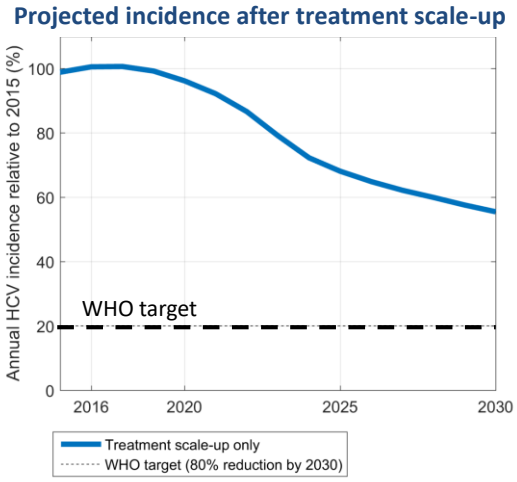
Treatment availability alone will not be enough to reach elimination targets



- Projected to reduce incidence by 45%
- **The majority (74%) of remaining infections were undiagnosed and among PWID**
  - ➢ Continued transmission

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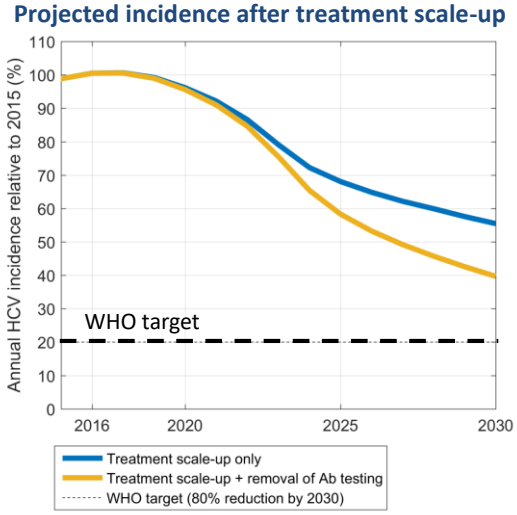
Improving retention in care



Complete follow-up after RNA testing can increase incidence reduction

- *Rapid point-of-care antibody testing?*
- *Replacing antibody with RNA testing for screening?*

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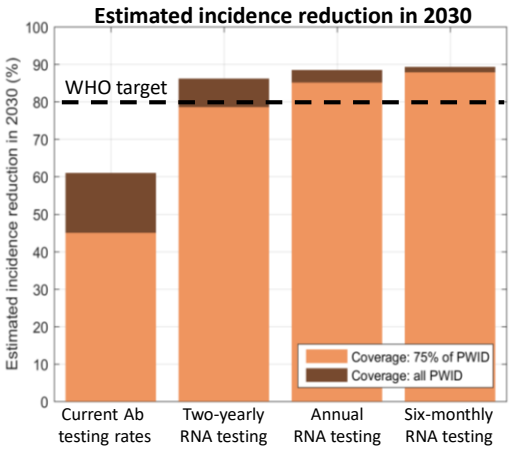
Reaching our target

If 100% follow-up Ab→RNA testing were achieved:

- Without perfect coverage, annual testing of PWID required to reach WHO incidence target (80% reduction)



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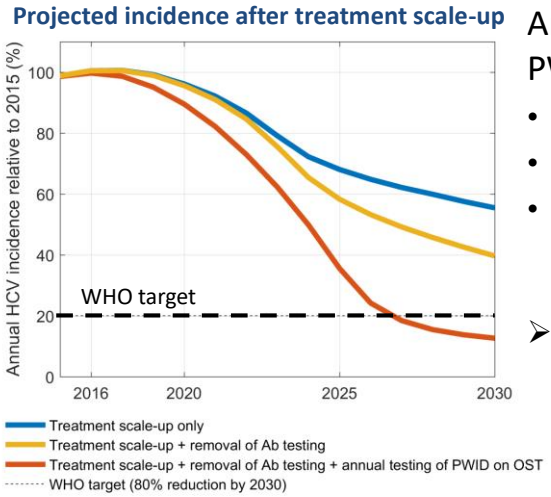
Projected incidence reduction



Annual RNA testing of PWID is needed to:

- Improve diagnosis rates
- Reduce loss to follow-up
- Generate enough treatment demand for treatment-as-prevention

➢ **91% reduction in incidence by 2030**

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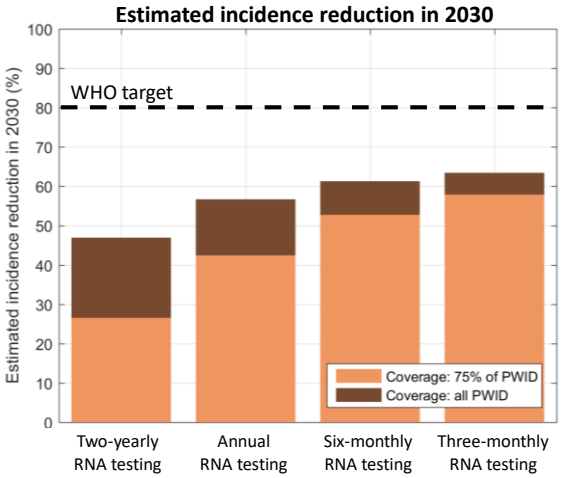
What about high prevalence settings, sub-populations or areas?

For areas of high prevalence (e.g. 75% prevalence among PWID; right):

- Testing is not enough
- Additional prevention required



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Conclusions

- Treatment uptake in Australia is projected to:
  - Reduce the number of people living with HCV from ~230,000 to ~24,000 by 2030
  - Reduce incidence by 45%
- Majority of remaining infections undiagnosed and among PWID
  - Transmission can continue
- Increased testing frequency and retention in care are both required among PWID to achieve incidence reduction target
  - **Annual RNA testing through OST and NSP services may be sufficient**
  - Cannot forget about other prevention, or particular needs of people or settings of higher risk

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