Public Health England

Protecting and improving the nation's health

Enhancing the bio-behavioural surveillance of hepatitis C among PWID in the UK in the era of Directly Acting Antivirals and Treatment as Prevention (TasP)

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Disclosures

I have previously received a research grant from Gilead, and speaker fees from Janssen.

Background

- Hepatitis C chronic prevalence
  - Hepatitis C antibody
- Hepatitis C incidence
  - DRID proxy marker
  - Hepatitis C antibody in new (<2 years) and young injectors
- Unlinked Anonymous Monitoring (UAM)
  - Long established surveillance system
  - Monitors Hepatitis C antibody to measure prevalence
  - Estimates Hepatitis C incidence using Hepatitis C antibody in recent initiates, avidity
  - Until now…..

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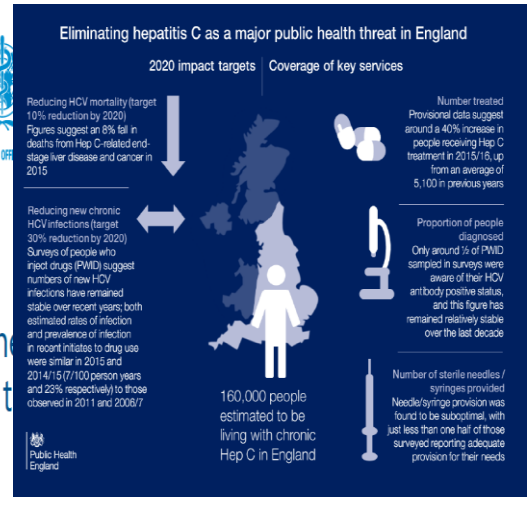

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Directly acting antivirals

- New direct-acting antivirals (DAAs) have the potential to transform the Hepatitis C treatment AND prevention landscape.
- SVR (~ cure) >90%
  - Oral
  - Shorter treatment durations
  - Improved side effect profiles
- Easy to roll out in community/outreach settings
- Practical reality: new DAAs are expensive

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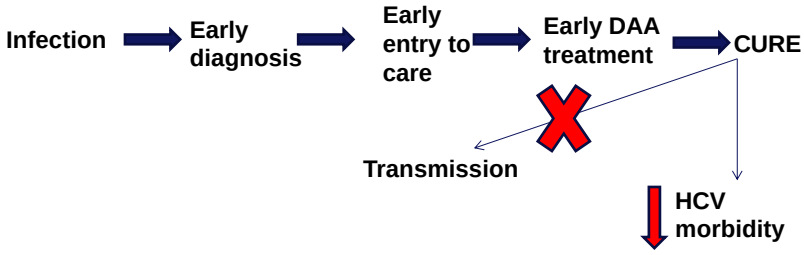
Directly acting antivirals and Treatment as Prevention



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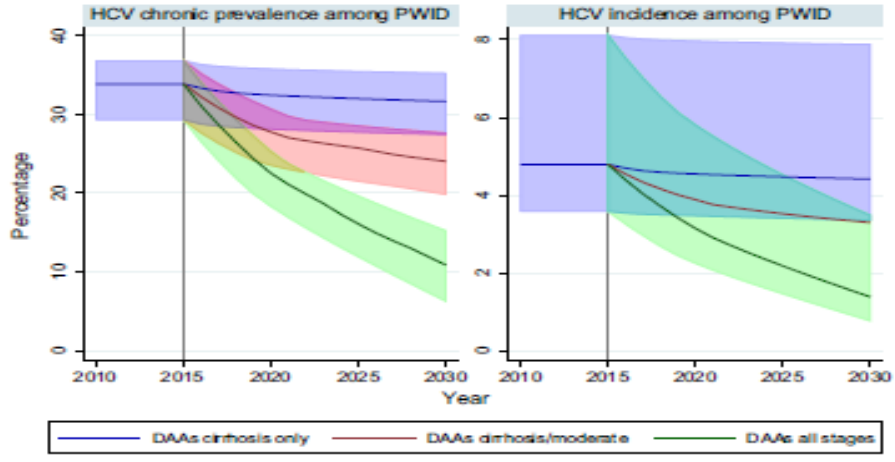
Estimated prevalence and incidence of HCV among PWID with scale up of DAAs



Harris et al. J Viral Hep 2016

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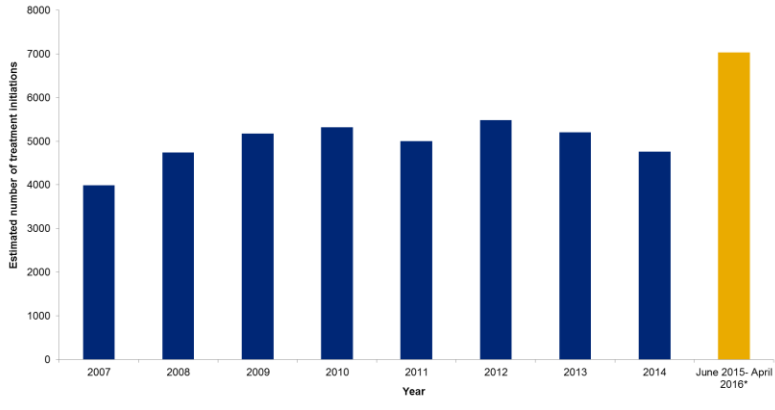
Provisional estimates of numbers initiating HCV treatment in England 2007-2015



*Data for England for June 2015-April 2016 are provisional and based on clinician reported intention to treat where there is some robustness about the intention to treat (e.g. incomplete or other records excluded).

Data sources: (i) NHS England for 2015 provisional estimate for England; (ii)Sentinel surveillance of hepatitis bloodborne virus testing for scaled estimates for 2012-2014 for England,
(iii) Estimates from Roche sales, IMS supply chain manager, and Pharmex data for England for 2007-2011(Harris et al. Journal of Hepatology 2014 vol. 61 j 530–53)

Hepatitis C in the UK Report 2017, PHE

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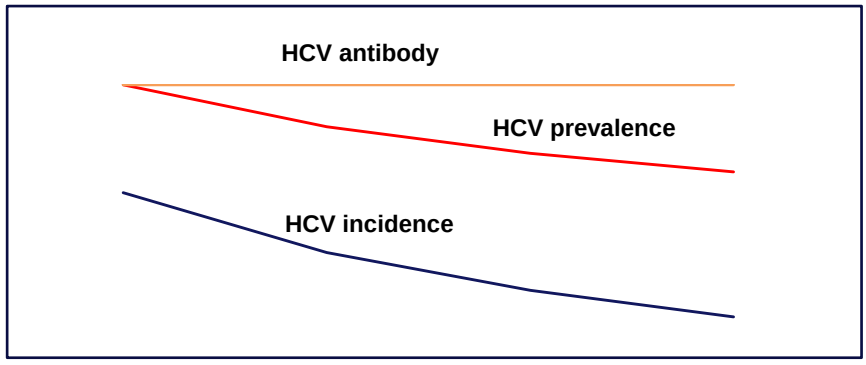
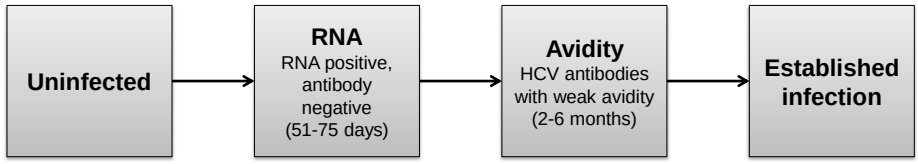
Impact on measures of HCV prevalence, incidence, reinfection



9 Hepatitis C testing and access to care among people who inject psychoactive drugs in the United Kingdom (UK): insights from national survey data.

Measuring hepatitis C incidence



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Hepatitis C avidity vs RNA as a measure of incidence

	Avidity	RNA
Window period	Long (2-6 months)	Shorter (51-75 days)
Cost	Lower	Higher ?reduced with automation
Hepatitis C incidence required		High
Sample size required	Slightly smaller sample size	Large sample size
False positive	Yes (some chronically infected have weak avidity, HIV positive)	No

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Comparison of measures of hepatitis C

Aim

To compare two cross-sectional markers of recent HCV infection: HCV RNA in antibody negative individuals *and* antibody avidity

Methods

Dataset: UAM survey of PWID 2011-2013

Tests: Laboratory tests for HCV RNA among anti-HCV negative and anti-HCV avidity

Analysis: separate and combination estimates of HCV incidence

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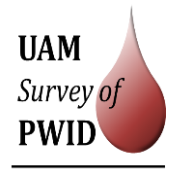
The Unlinked Anonymous Survey of People Who Inject drugs



- Psychoactive drug use in EWNI
- Sentinel surveillance by voluntary recruitment at collaborating drug agencies.
- Participants
  - Complete a short behavioural questionnaire
  - Provide a DBS sample: HIV, HBV, HCV
- An unlinked and anonymous methodology

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Survey Aims:

1) Measure BBV Prevalence among PWID population

2) Monitor changes in both risk and protective behaviours related to drug taking.

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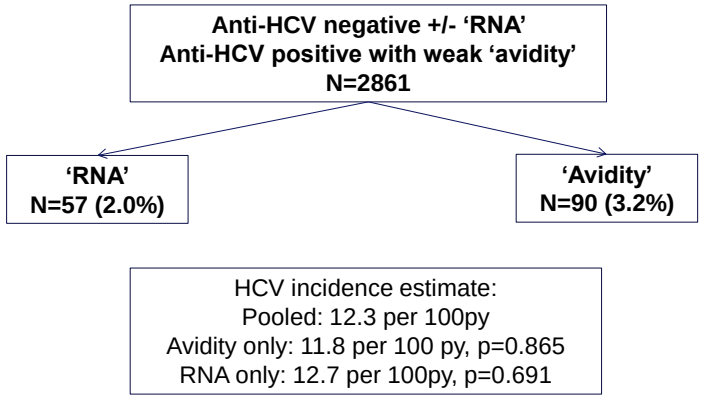
Results



'RNA'= HCV RNA positive, anti-HCV negative
'Avidity' = weak anti-HCV avidity and HCV RNA present

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Markers for HCV incidence with changes in HCV prevalence

- RNA and avidity provide similar HCV incidence estimates in higher HCV prevalence settings
- RNA limited by short window period
- Avidity limited by uncertainty about its longer window period
- Where HCV incidence is high, one marker may provide an accurate incidence estimate
- In the context of falling incidence (e.g. due to TasP), use in combination may be required

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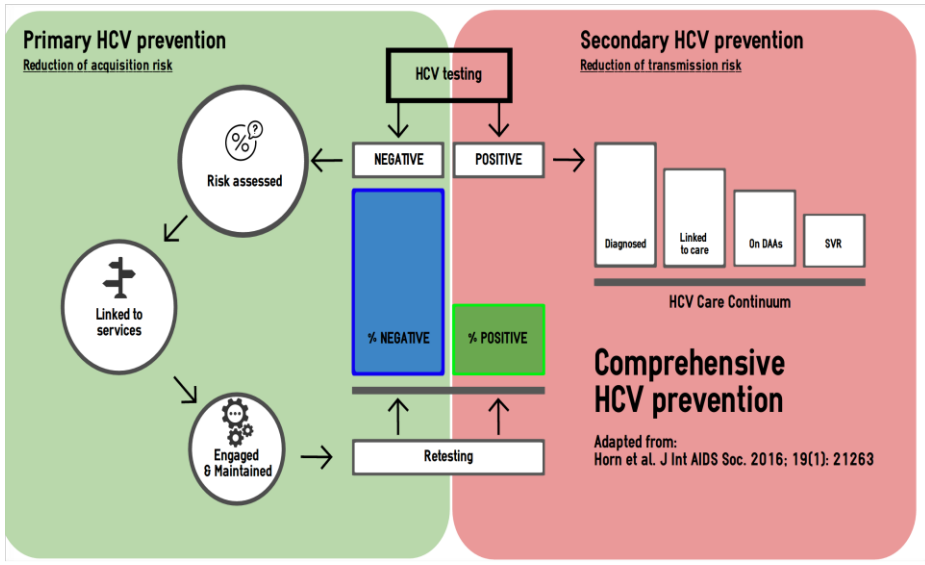
HCV incidence in England: RNA

- RNA testing ALL samples from October 2016 onwards
- No extra resource
- Automation

Discussion

- Fluctuations in incidence
  - Incidence unstable in cross-sectional surveys
  - Transient state of incident infections/outbreaks
- Trends in incidence need longer-term monitoring and mathematical modelling
- Importance of avidity/RNA for monitoring incidence, chronic prevalence, reinfection



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Peter Vickerman, Matt Hickman

Survey collaborators

Survey participants

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