



HCV Prevention among PWID

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- NIHR (HS&DR) (12/3070/13) - Assessing the impact and cost-effectiveness of NSP on HCV
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The views expressed are those of the author(s) and not necessarily those of the NHS, the NIHR or the Department of Health.

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European Monitoring Centre
for Drugs and Drug Addiction

INSIGHTS

EN

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Hepatitis C among drug users in Europe

Epidemiology, treatment and prevention

23



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<http://www.emcdda.europa.eu/publications/insights/hepatitis-c-among-drug-users-in-europe>

 **OST AND NSP**

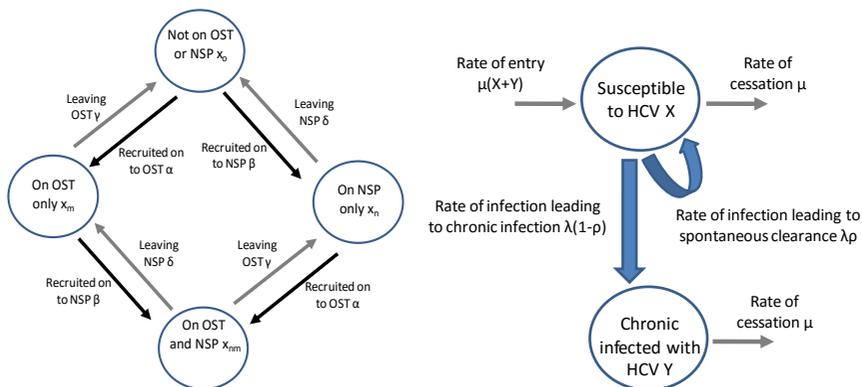


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CAN SCALING UP COVERAGE OF OST & NSP ACHIEVE FURTHER SUBSTANTIAL REDUCTIONS IN HCV AMONG PWID

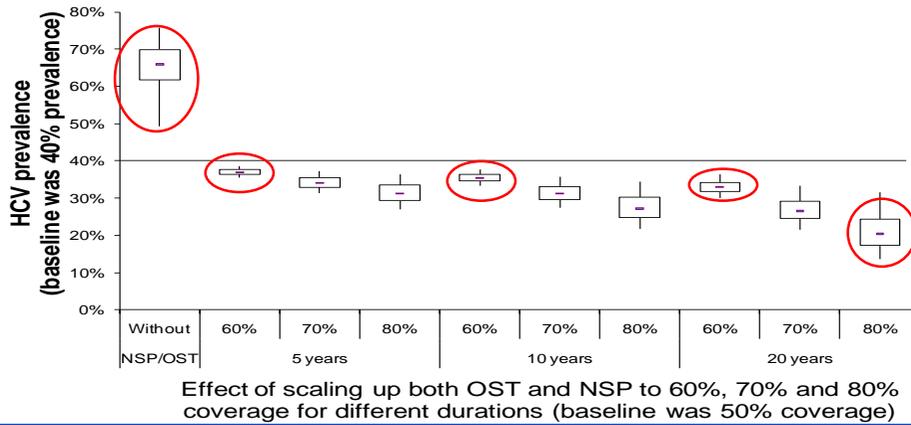


Modeling transitions between OST and NSP & transmission of HCV



Vickerman et al Addiction 2012
doi:10.1111/j.1360-0443.2012.03932.x

✦ Impact of changing coverage of OST and NSP from 50%: 0% 60% 70% 80%

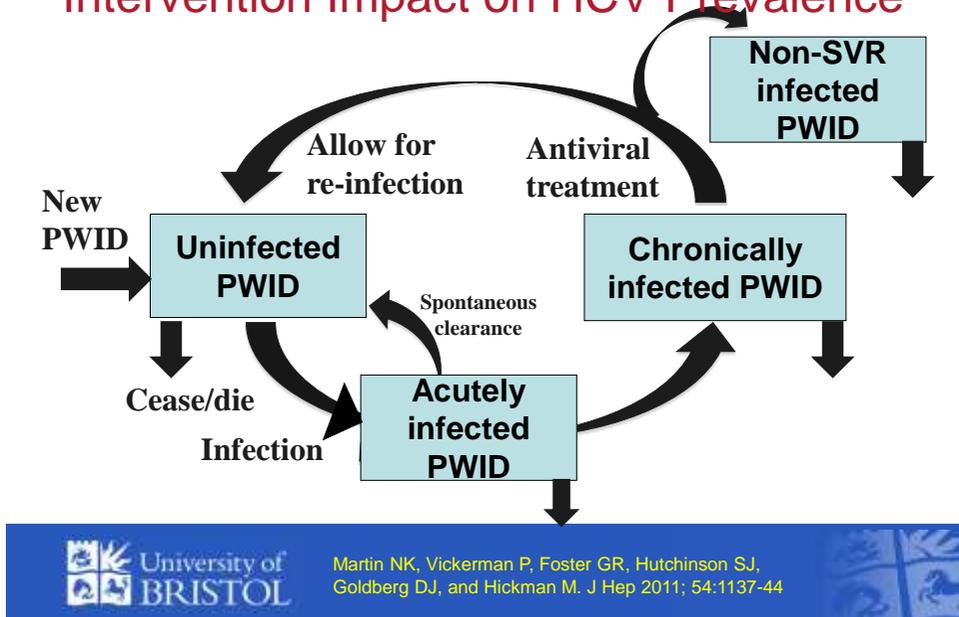



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 [Vickerman et al Addiction 2012
doi:10.1111/j.1360-0443.2012.03932.x](https://doi.org/10.1111/j.1360-0443.2012.03932.x)

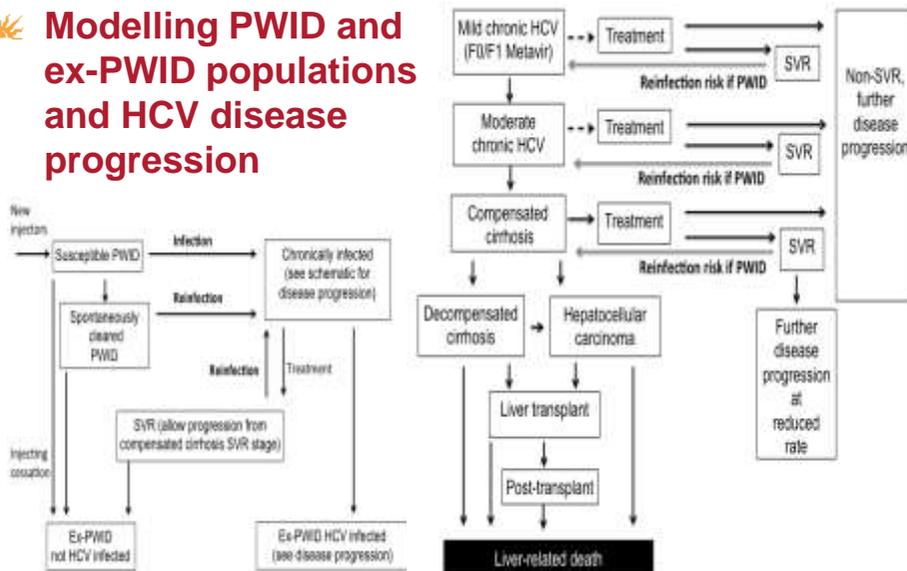
✦ **MODELLING HCV TREATMENT AS PREVENTION**


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Need Dynamic Model to Assess Intervention Impact on HCV Prevalence

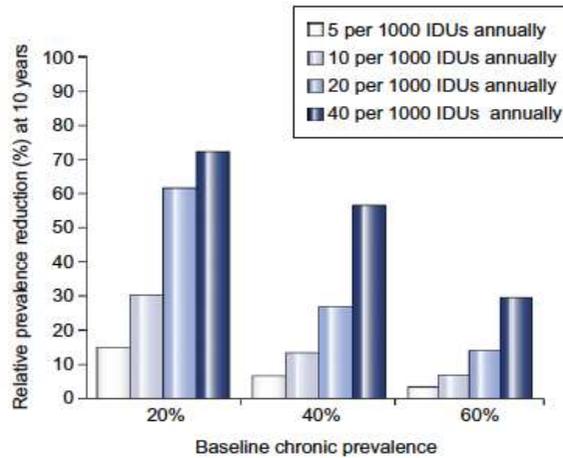


Modelling PWID and ex-PWID populations and HCV disease progression



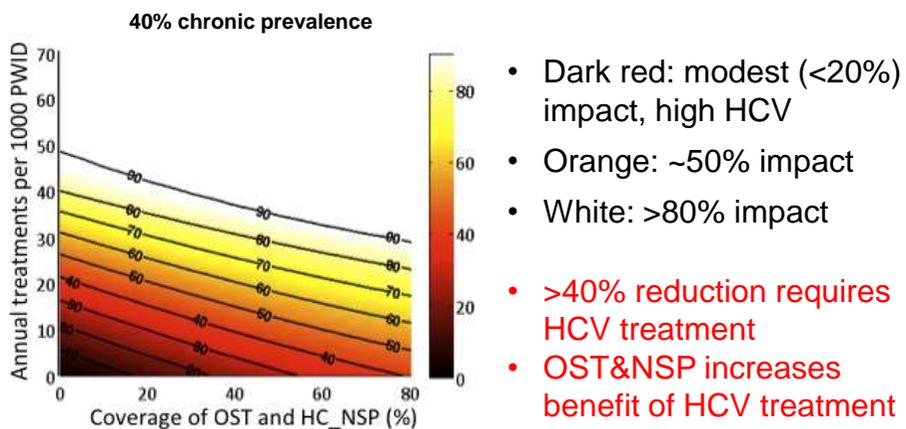
☀️ MODELLING HCV TREATMENT AS PREVENTION

HCV RELATIVE PREVALENCE REDUCTIONS AT 10 YEARS WITH PEGIFN+RBV



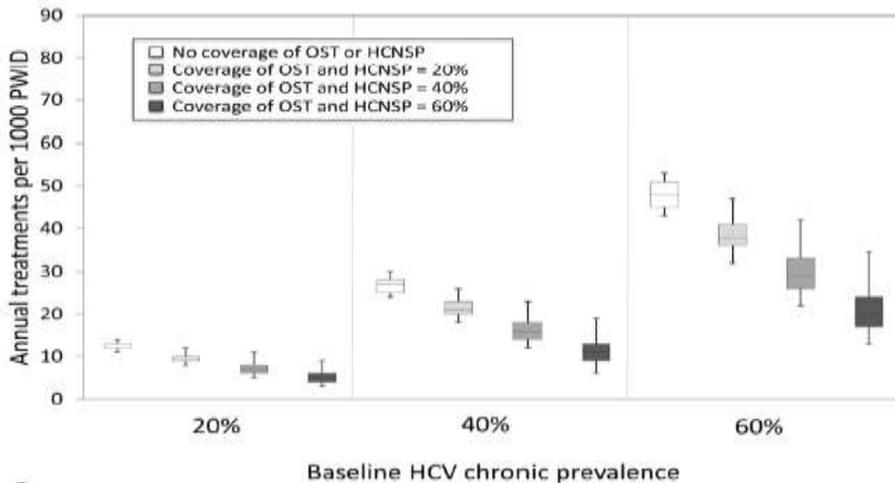
Martin NK, Vickerman P, Foster GR, Hutchinson SJ, Goldberg DJ, and Hickman M. J Hep 2011; 54:1137-44

☀️ COMBINATION PREVENTION SCALE-UP (OST/NSP/DAAS): 10 YEAR RELATIVE PREVALENCE REDUCTIONS WITH NO BASELINE COVERAGE OF OST/NSP AND USING DAAs



Martin NK, Hickman M, Hutchinson SJ, Goldberg DJ, and Vickerman P. C. Clinical Infectious Diseases 2013

NECESSARY DAA TREATMENT RATES TO HALVE CHRONIC PREVALENCE IN 10 YRS WITH HARM REDUCTION



TREATMENT PRIORITISATION – WHO SHOULD GET NEW DAA

- Recommendations**
- All treatment-naïve and -experienced patients with compensated disease due to HCV should be considered for therapy (**Recommendation A1**)
 - Treatment should be prioritized for patients with significant fibrosis (METAVIR score F3 to F4) (**Recommendation A1**)
 - Treatment is justified in patients with moderate fibrosis (METAVIR score F2) (**Recommendation A2**)
 - In patients with no or mild disease (METAVIR score F0-F1), the indication for and timing of therapy can be individualized (**Recommendation B1**)
 - Patients with decompensated cirrhosis who are on the transplant list should be considered for IFN-free, ideally ribavirin-free therapy (**Recommendation A1**)

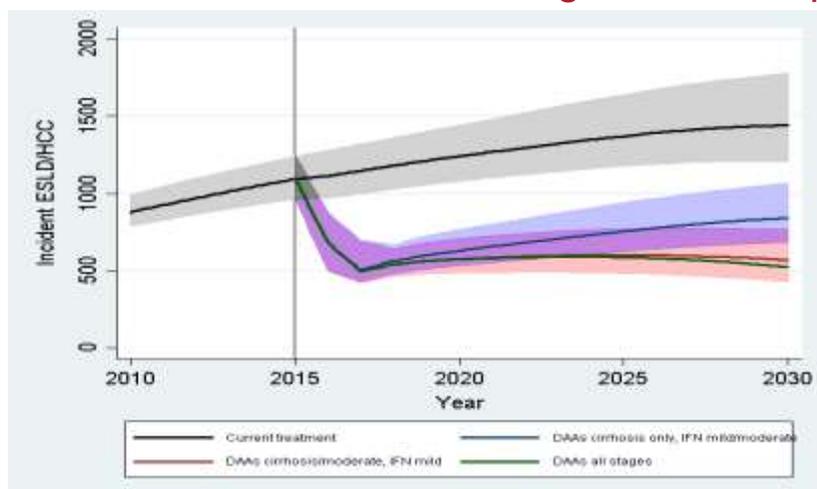
- Treatment should be prioritized regardless of the fibrosis stage for individuals at risk of transmitting HCV, including active injection drug users, men who have sex with men with high-risk sexual practices, women of childbearing age who wish to get pregnant, haemodialysis patients, and incarcerated individuals (**B1**)

Grade B1

Evidence Quality: Moderate “Further research is likely to have an important impact on our confidence in the estimate of effect”

Recommendation: Strong

🔥 **Projected incidence of ESLD or HCC under current treatment rates or targeted scale up**

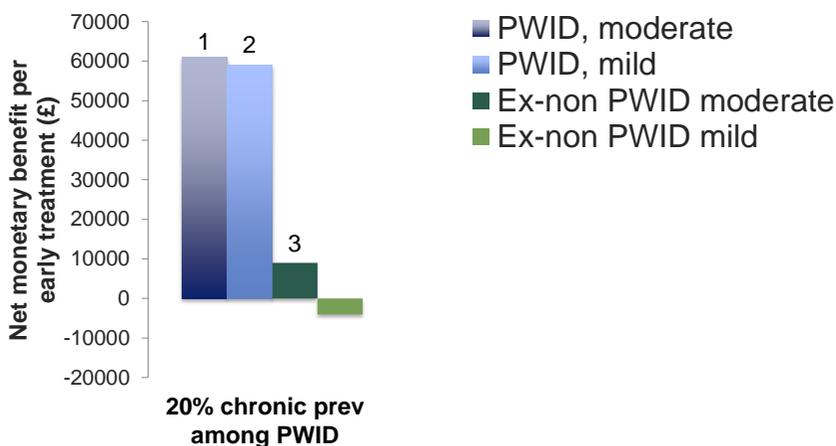


🌟 HCV TREATMENT PRIORITIZATION: IS TREATING PWID WITH MILD DISEASE COST-EFFECTIVE?

- **Perspective:** UK Health Care Provider
- **Settings:** PWID chronic HCV prevalence at 20, 40, 60%
- **DAA treatment:** 12 weeks at £3300/wk; SVR 95%
- **Discount** health utilities (QALYs) and costs (GBP£) 3.5%/year
- **Time horizon:** 50 years
- Rank prioritization group by **net monetary benefit**
 - NMB= mean incremental QALYs * WTP– mean inc. costs
 - £20,000 willingness to pay threshold (WTP)

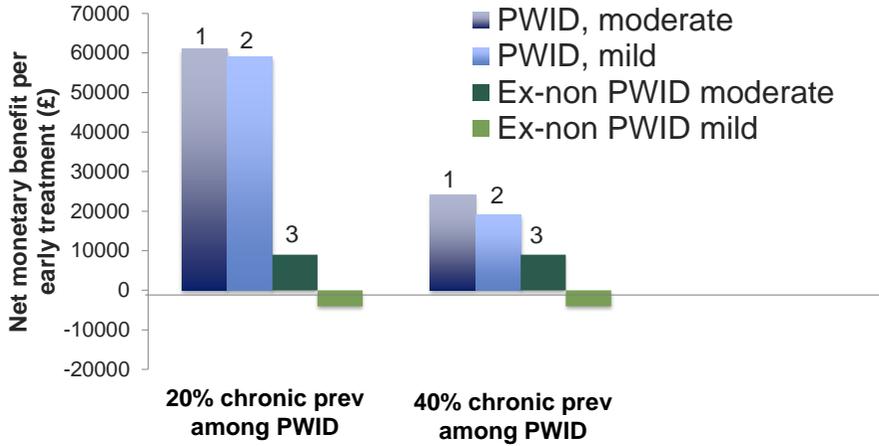

Negative NMB means better to delay treatment (treatment at that stage not cost-effective)
 Martin et al. J Hepatology 2016

IN 20%/40% CHRONIC PREVALENCE SETTING, CONSIDER PRIORITIZING BY RISK STATUS




 *£20,000 willingness to pay. . £1=USD\$1.60=AUD\$2.1
 Martin NK et al. J Hepatology 2016

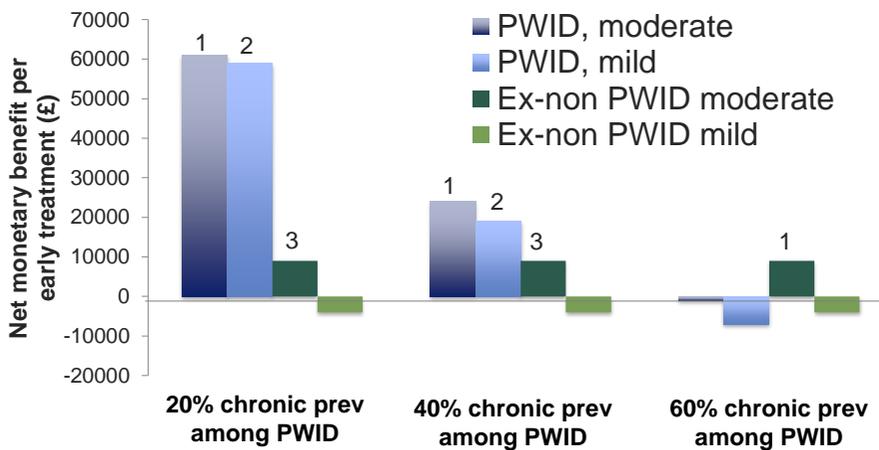
**IN 20%/40% CHRONIC PREVALENCE SETTING,
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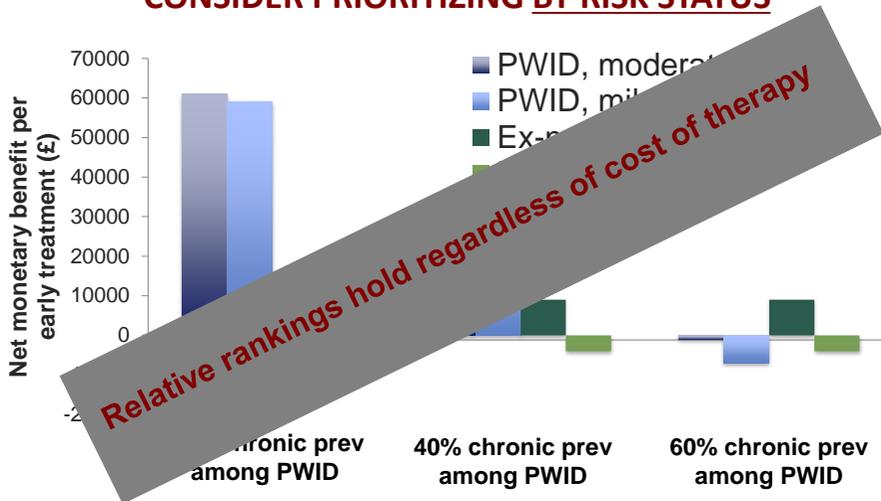
**IN 60% CHRONIC PREVALENCE SETTING, PRIORITIZE
BY LIVER DISEASE STAGE**



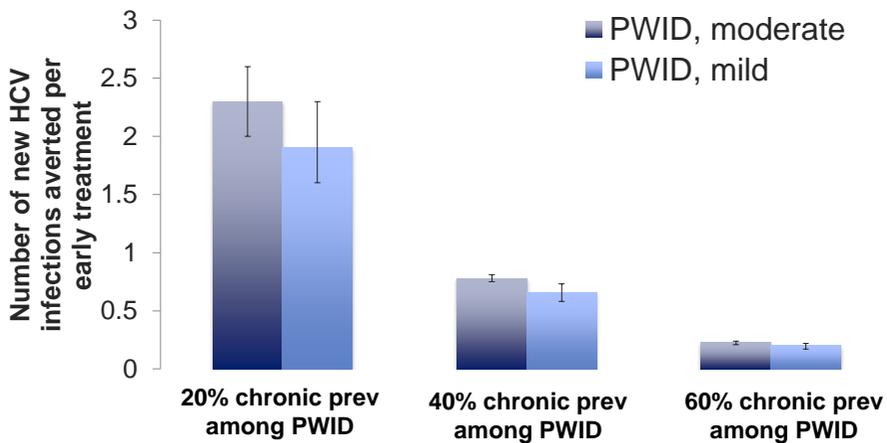


 *£20,000 willingness to pay. . £1=USD\$1.60=AUD\$2.1
 Martin NK et al. J Hepatology 2016

**IN 20%/40% CHRONIC PREVALENCE SETTING,
CONSIDER PRIORITIZING BY RISK STATUS**



**NUMBER OF NEW INFECTIONS AVERTED PER
EARLY TREATMENT**



☀️ ARE CURRENT HCV TREATMENT RATES SUFFICIENT TO ACHIEVE A MEASURABLE CHANGE IN HCV TRANSMISSION?



☀️ Implications – mixture of evidence

- Empirical evidence that OST/NSP reduces HCV transmission
 - NSP & OST highly cost-effective
 - Models suggest that: OST/NSP avert HCV transmission & increase impact of HCV treatment as prevention
- Empirical evidence that new HCV DAA treatments achieve high SVR & that people with SVR reduce risk of ESLD/ liver cancer
- Treatment priority is to reduce/reverse trends in liver disease



Implications – mixture of evidence

- Dynamic and Economic Models show that:
 - HCV treatment scale-up critical for HCV prevention in PWID
 - Increasing HCV case-finding in PWID cost-effective
 - Early treatment of PWID cost-effective
- No observed evidence (yet) of HCV TasP
 - Models suggest current treatment rates with switch to DAA may lead to observable change in HCV transmission
 - Uncertainty in measuring PWID prevalence & HCV incidence and prevalence in community surveys
- Promote HCV TasP experiments to generate empirical evidence

 **END**