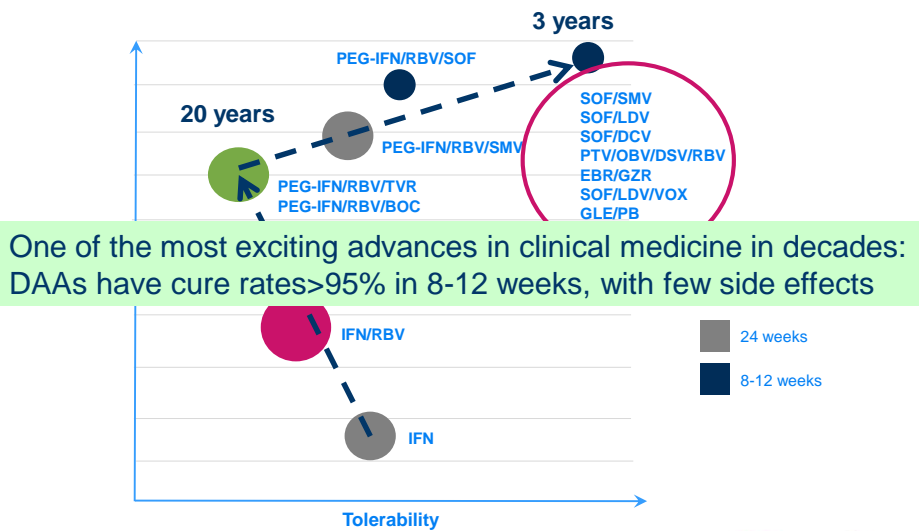


DAA Treatment for People Who Inject Drugs

Brianna Norton, DO, MPH
Albert Einstein College of Medicine
Montefiore Medical Center

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Evolution of HCV therapies

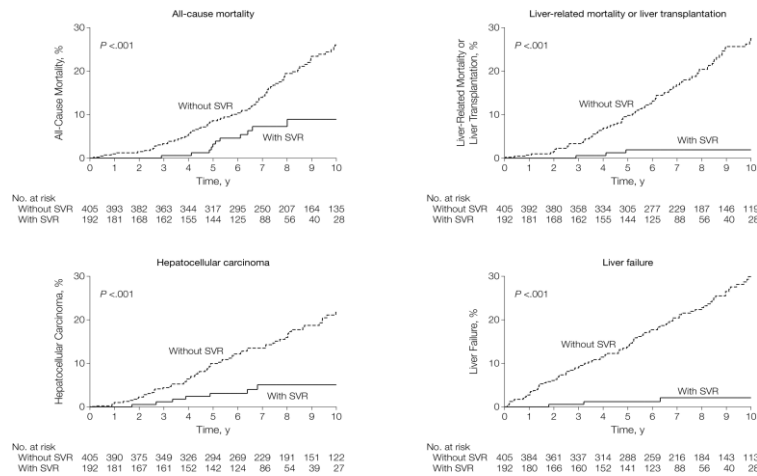


Dore GJ & Feld J. CID 2015 (revised)

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Why should we treat PWID with DAAs?

Individual: Reduction in Mortality

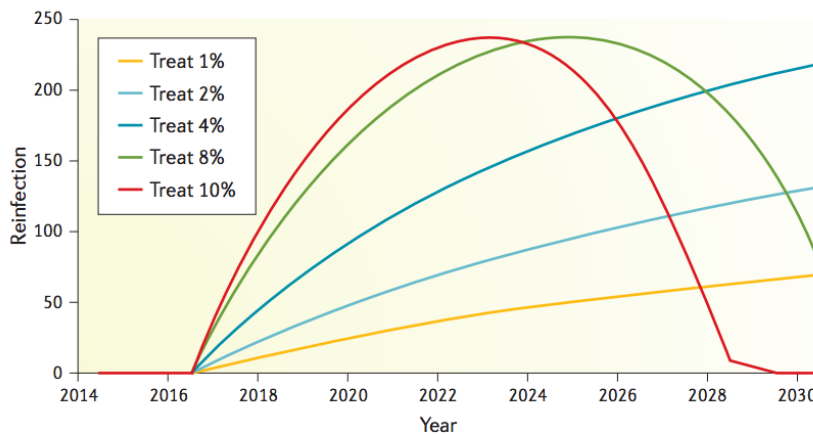


van der Meer et al. JAMA, 2012

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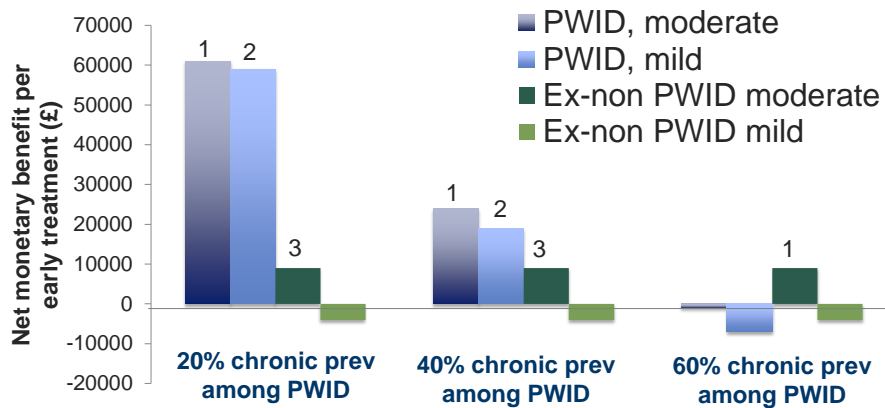
Why should we treat PWID with DAAs?

Public Health: Reduce Transmission

Razavi et al. 4th International Network of Hepatitis in Substance Users

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Why should we treat PWID? \$\$\$\$- It's Cost Effective!



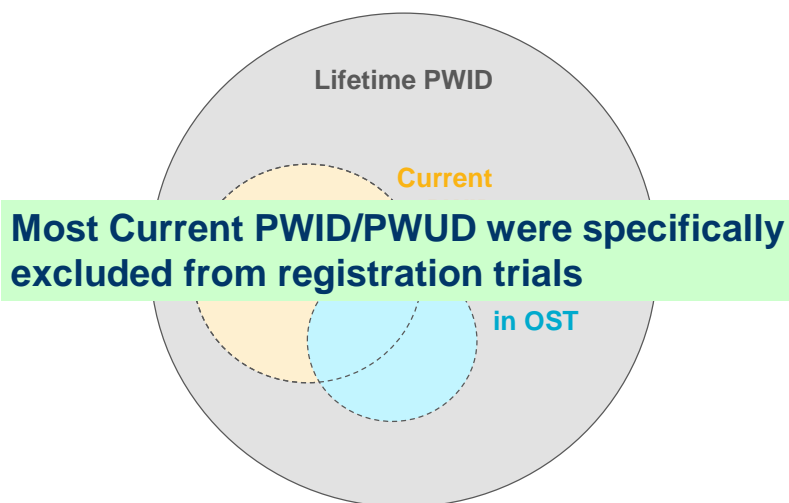
*£20,000 willingness to pay.
Martin NK et al. J Hepatol 2016; 65(1):17-25.

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***What is the evidence to show that
DAA's are effective in
People Who Inject Drugs?***

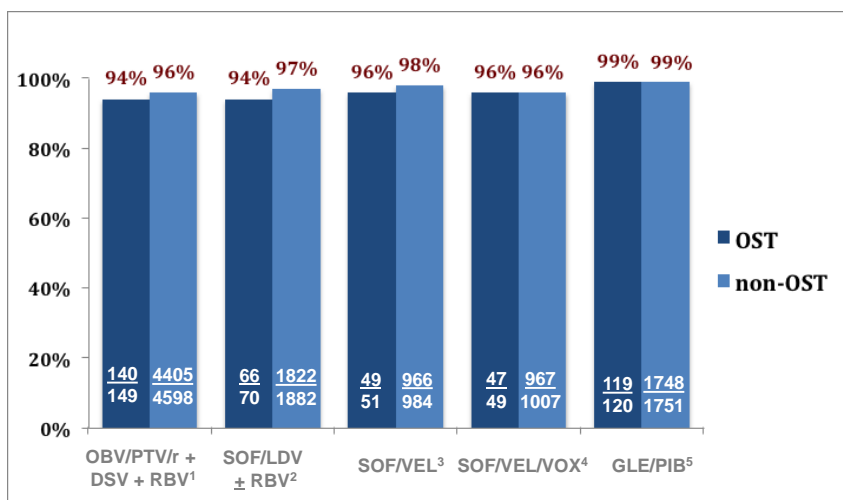
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Defining Populations of PWID



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People receiving OST :Post-hoc analysis of phase II/III trials

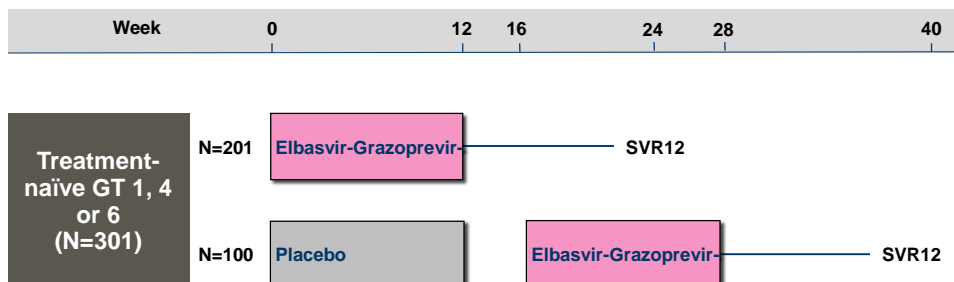


1) Grebely J, ILC 2017, Amsterdam, The Netherlands, April 19-23rd, 2017. 2) Grebely CID 2016. 3) Grebely CID 2016.

4) Grebely J, ILC 2017, Amsterdam, The Netherlands, April 19-23rd, 2017. 5) Zeuzem, S. Ann Intern Med 2015. 6) Dore, GJ Ann Intern Med 2016. Zeuzem 2016; Puoti, 2017

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C-EDGE CO-STAR Elbasvir-Grazoprevir in PWID on Opiate Agonist Therapy



20% with cirrhosis

8% with HIV/HCV Coinfection

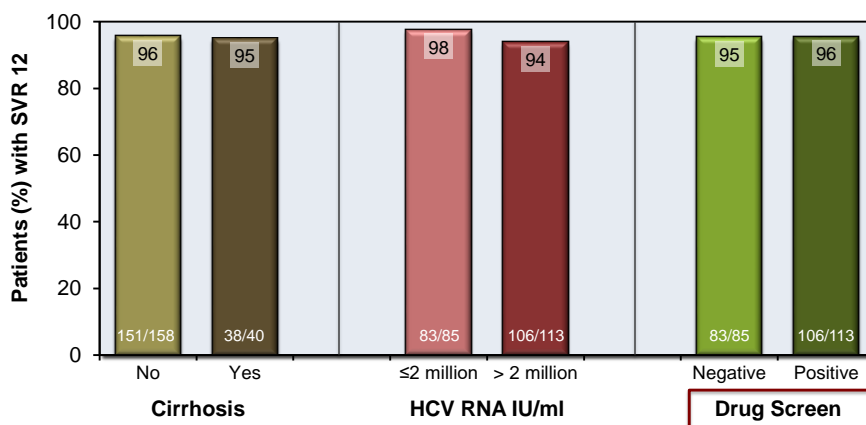
60% with positive baseline urine toxicology

Source: Dore G, et al. AALSD. 2015; Abstract 40.

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Great Cure Results Despite Drug Use

C-EDGE CO-STAR: SVR12 Results with Modified Full Analysis Set[^]



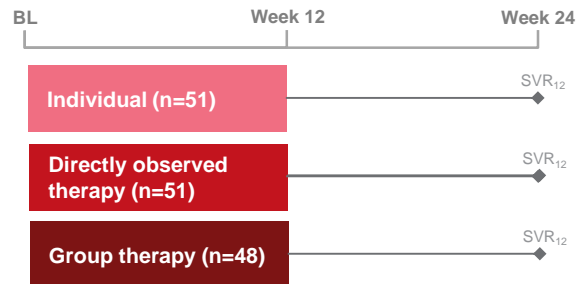
[^]Excludes patients who discontinued trial for non-treatment related reasons

Source: Dore G, et al. AALSD. 2015; Abstract 40.

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PREVAIL Study – Prospective Study

- RCT, HCV genotype 1, history of injecting drug use, receiving OST
- Electronic blister packs to monitor adherence
- Therapy as per AASLD guidelines (TPV/PEG/RBV, SOF/RBV \pm PEG, SOF/SMV, SOF/LDV)

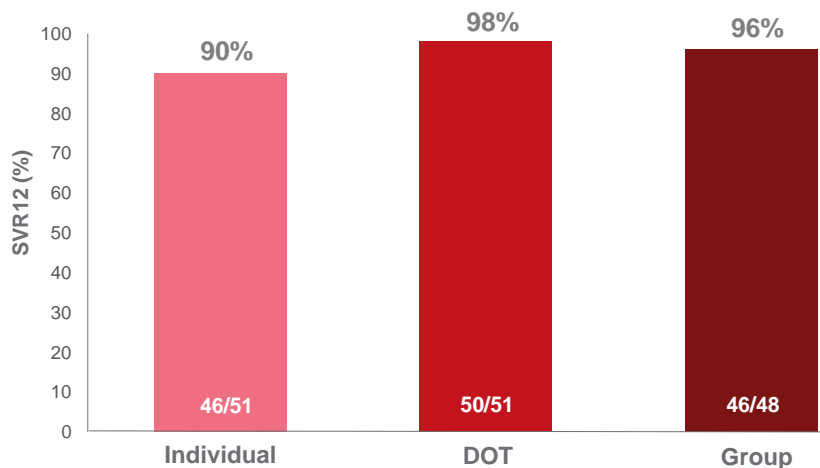


Litwin AL, et al. INHSU 2017, NJ, USA

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PREVAIL Study – SVR12

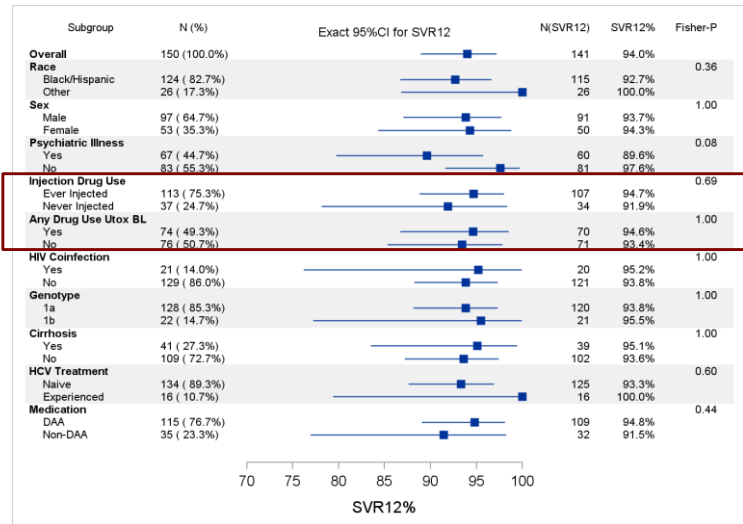
- 85% genotype 1a, 27% cirrhosis, 11% treatment-experienced, 14% HIV
- 98% methadone, 65% with recent drug use in last 6 months



Litwin AL, et al. ILC 2017, Amsterdam, The Netherlands, April 19-23rd, 2017 (PS-130)

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PREVAIL: Factors Associated with SVR

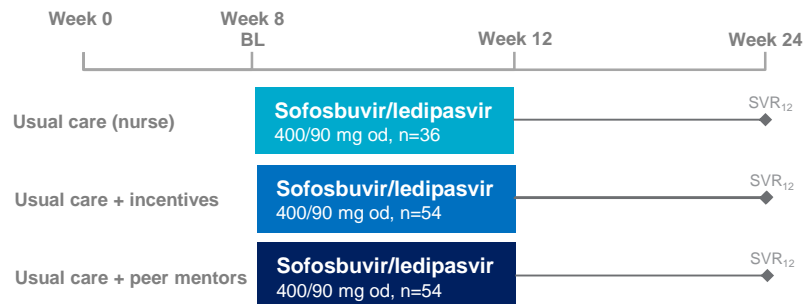


Litwin AL, et al. ILC 2017, Amsterdam, The Netherlands, April 19-23rd, 2017 (PS-130)

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CHAMPS study: History of Injection

- RCT, genotype 1, HIV-infected and history of injection drug use
- Primary Outcome: Treatment UPTAKE
- 25% CURRENT PWID

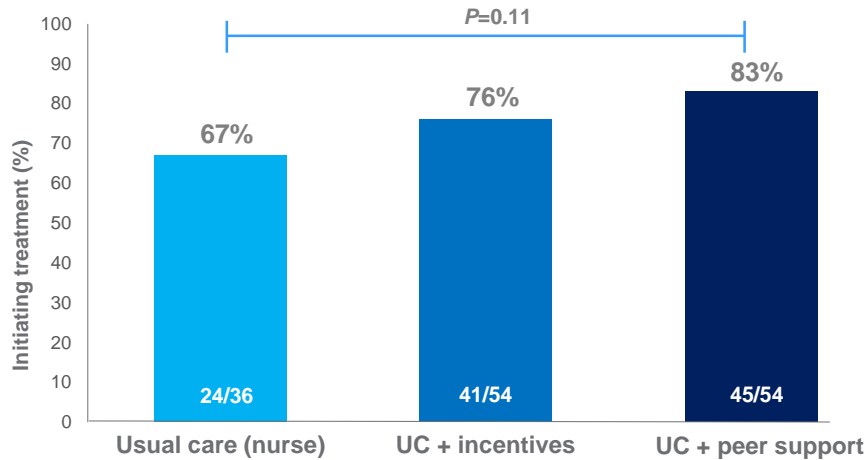


Sulkowski M, et al. ILC 2017, Amsterdam, The Netherlands, April 19-23rd, 2017 (SAT-228)

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CHAMPS study – DAA treatment uptake

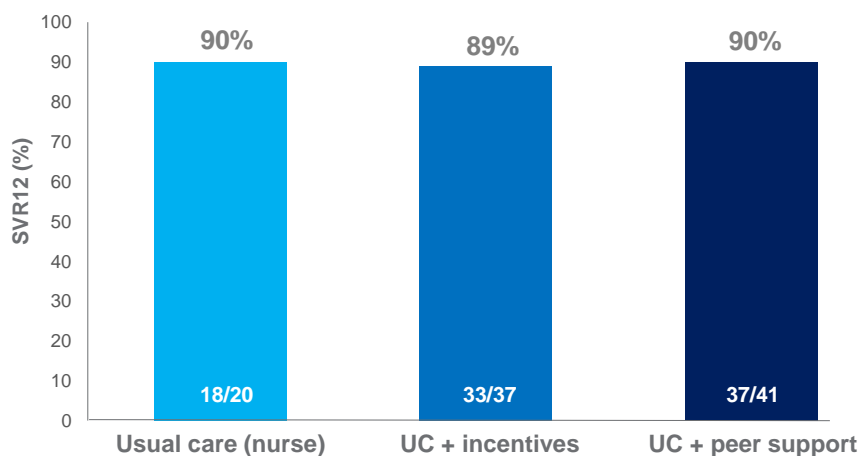
- HCV genotype 1, 12% cirrhosis, 25% recent cocaine/heroin use



Sulkowski M, et al. ILC 2017, Amsterdam, The Netherlands, April 19-23rd, 2017 (SAT-228)

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CHAMPS study – SVR12

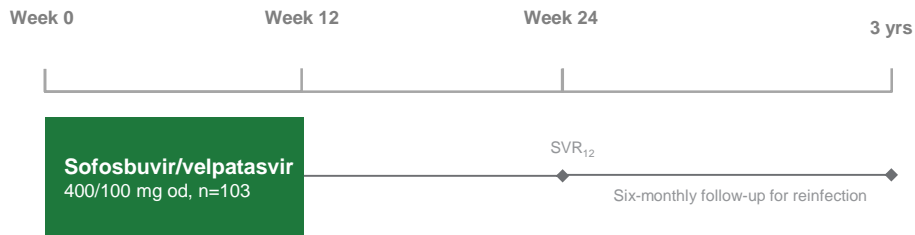


Sulkowski M, et al. ILC 2017, Amsterdam, The Netherlands, April 19-23rd, 2017 (SAT-228)

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All Recent PWID – The SIMPLIFY Study

- Kirby/UNSW sponsored, international open-label trial
- DAA treatment-naïve patients with GT1-6 chronic HCV infection (F0-4)
- Electronic blister packs to monitor adherence
- 100% people with recent injecting drug use (past six months)
- 74% Injection use in last 1 month
- 57% on OST

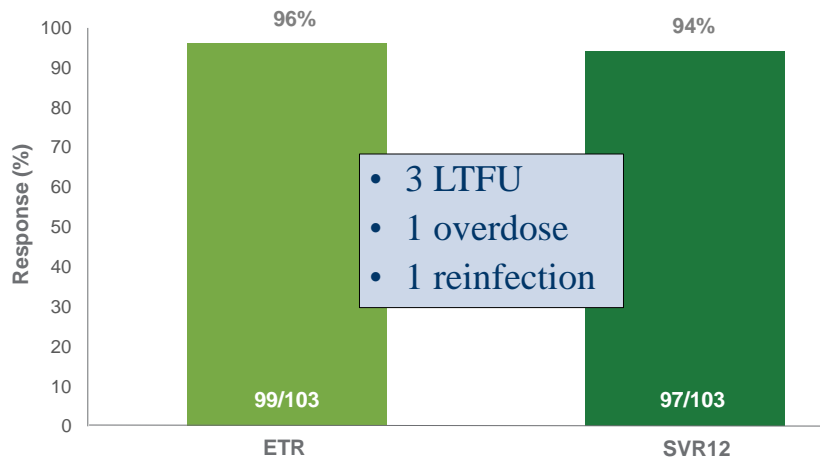


Grebely J, et al. ILC 2017, Amsterdam, The Netherlands, April 19-23rd, 2017 (FRI-234)

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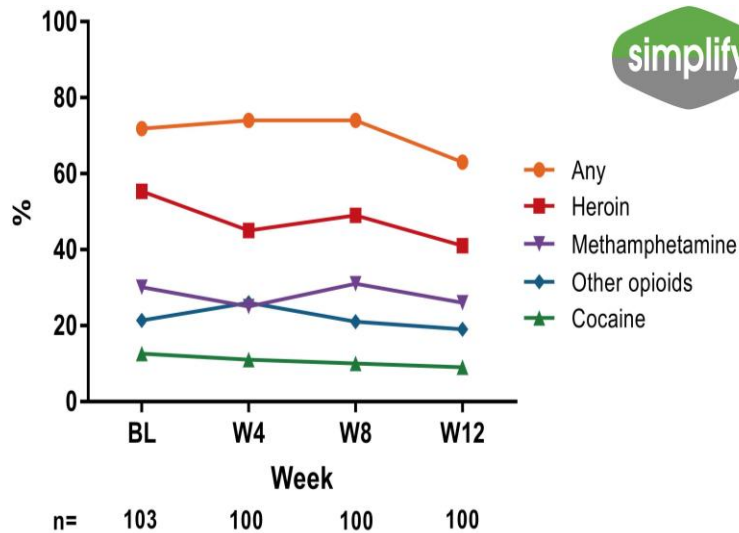
Recent PWID – The SIMPLIFY Study

- 74% injecting in past 30 days
- 35% G1a, 58% G1b, 9% cirrhosis, DAA-treatment naïve

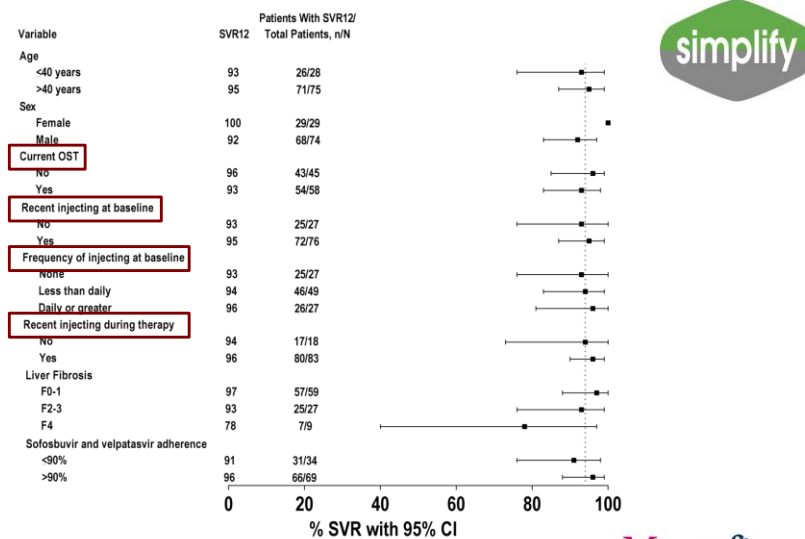


Grebely J, et al. ILC 2017, Amsterdam, The Netherlands, April 19-23rd, 2017 (FRI-234)

Simplify: Injecting Drug Use During Therapy



Simplify: SVR, stratified by patient characteristics



Adherence among people who recently injected drugs (n=103)



Daily adherence to sofosbuvir and velpatasvir therapy as measured by weekly electronic blister packs.

Green boxes represent dose received, yellow boxes represent no dose received

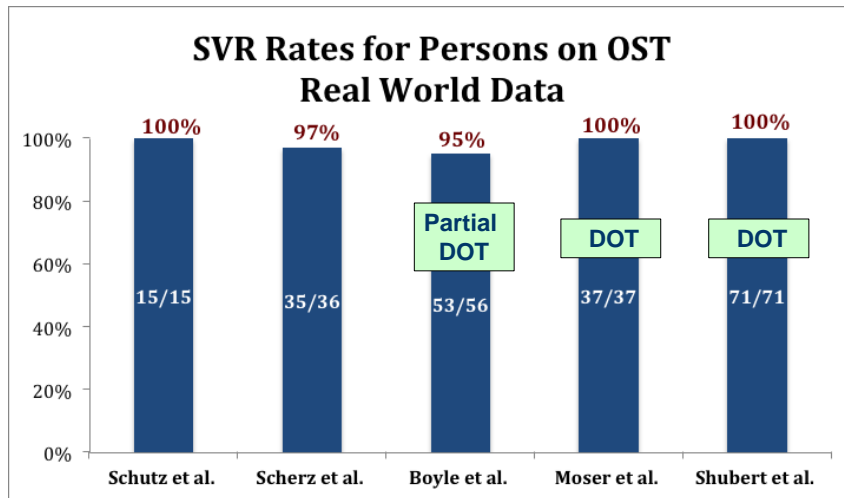
Grebely et al INHSU 2017

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What about in the “real-world”?

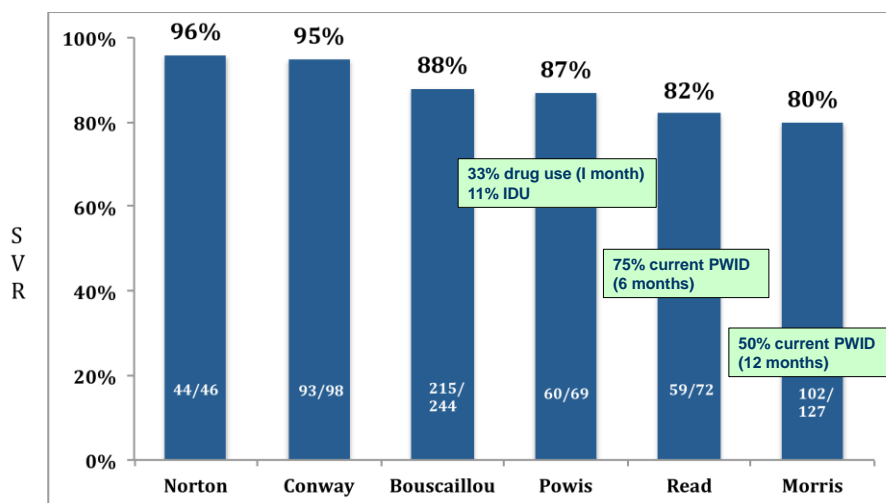
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OST in the “real-world”?



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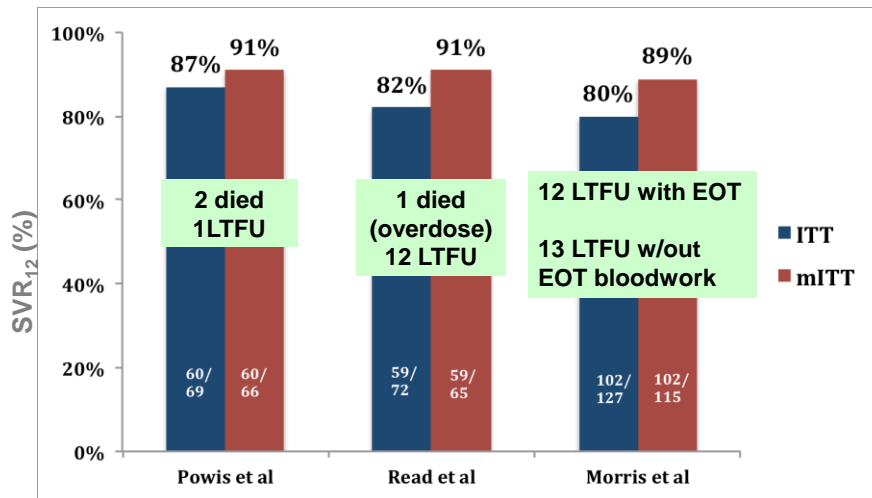
PWID (former/recent) in the “Real World”



1) Norton B, et al. CROI 2016. 2) Conway AASLD 2016. 3) Bouscaillou EASL 2017. 4) Powis J. Int J Drug Policy In Press 2017. 5) Read P. Int J Drug Policy In Press 2017. 6) Morris, et al. Int J Drug Policy in Press 2017

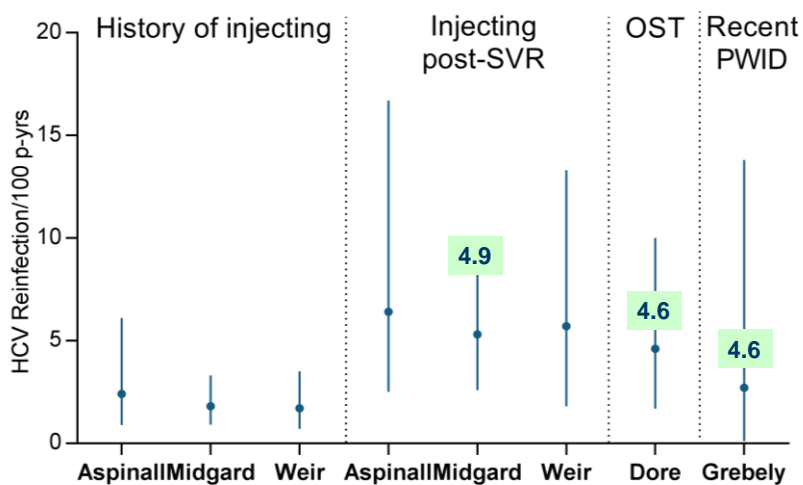
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The Significance of Lost to Follow-up



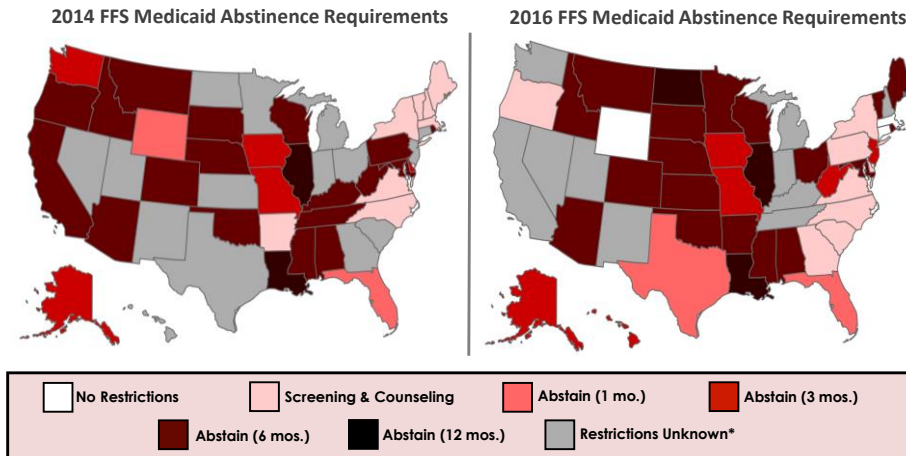
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REINFECTION



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Why are these data important?

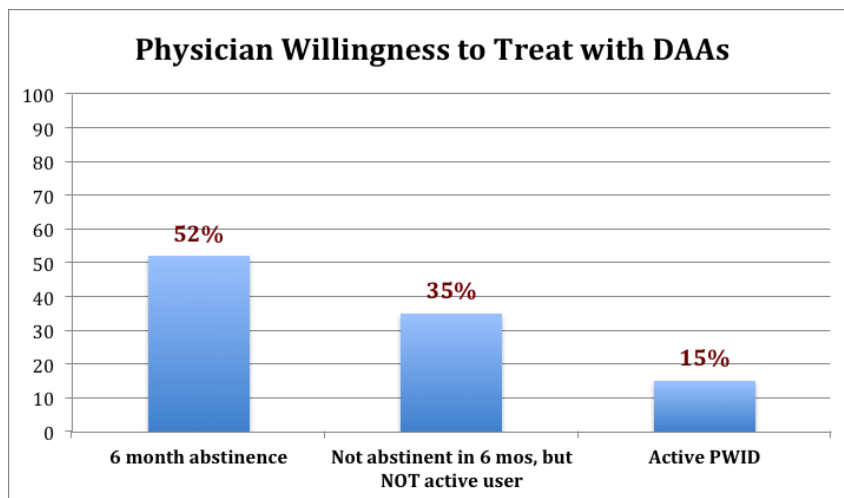


71% of US states have restrictions related to drug use

1) Barua S, et al. Ann Intern Med 2015, 2) Greenwald R, et al. AASLD 2016, (Modified with permission)

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Why are these data important?



Asher, Page et al. Substance Use and Misuse. May 2016

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Conclusions

- **DAA's are effective in persons**
 - prescribed OAT
 - prescribed OAT with recent drug use
 - Recent drug use only
- **Clinicians, advocates, and PWID**
 - Treat people who use drugs
 - Collect data on treatment for PWID
 - Influence colleagues, as well as policy makers!
- **Linkage to Care and Lost to Follow-up need to be addressed**

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Future Research Priorities

- **Collect more real-world data on persons currently injecting drugs (recent use)**
 - Focus on linkage, and LTFU
 - Models of Care: Treatment in syringe exchange, CBO, mobile vans: bring tx to the people
 - Surveillance systems: determine cascade of care
 - **Collect Data on Reinfection**
 - Specifically in PWID Post-HCV Treatment
 - **Collect Granular Data on Drug Use**
 - Mode of Use
 - Patterns of Use
 - Type of Drug Use, particularly stimulants
-
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Acknowledgments

- The community of PWID who participated in these studies
- Alain Litwin, MD, MPH
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- Chinazo Cunningham, MD, MS
- Jason Grebely, PhD
- Professor Greg Dore
- Natasha Martin, DPhil

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