New York State HCV Provider Webinar Series

Treating HCV in Persons with Mental Health & Substance Use Disorders

Jeffrey J. Weiss, PhD, MS
January 14, 2020
Objectives

1. Identify the relevance of mental health and substance use disorders for hepatitis C care and treatment

2. Plan to integrate assessment tools into your clinical practice

3. Propose strategies and models of care to effectively treat persons with mental health and substance use disorders for hepatitis C infection
Higher Prevalence of HCV in Marginalized Groups

Rates of HCV infection:

- IDU > 10 years of use 90% (Tseng et al. 2007)
- IDU < 9 years of use 66% (Tseng et al. 2007)
- Homeless persons 15% (Hofmeister et al. 2019)
- Incarcerated 16% (Hofmeister et al. 2019)
- Severely mentally ill 20% (Rosenberg et al. 2001)
- US population (reference) 1.5% (Hofmeister et al. 2019)

HCV Adherence Challenge in 2020

- Psychiatric disorders, substance use disorders and cognitive impairment have been shown to be general risk factors for medication non-adherence across multiple medical conditions.

- As we progress toward HCV elimination, the patients who remain to be treated will present with increasingly complex neuropsychiatric profiles.
HCV Cascade – Mental Health & Substance Use Relevant at Every Step

1. Chronic HCV Diagnosed
2. Linked to Care
3. Prescribed Treatment
4. Achieved SVR
# Perspectives on HCV Treatment in Persons with Psychiatric and Substance Use Disorders

<table>
<thead>
<tr>
<th>Public Health Focus</th>
<th>Lens</th>
<th>Disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adherence</td>
<td>Individual</td>
<td>Psych &amp; SU</td>
</tr>
<tr>
<td>Transmission (TaP)</td>
<td>Public Health/ Elimination Goals</td>
<td>SU</td>
</tr>
<tr>
<td>Reinfection</td>
<td>Cost/Elimination Goals</td>
<td>SU</td>
</tr>
<tr>
<td>Engagement</td>
<td>Harm Reduction</td>
<td>Psych &amp; SU</td>
</tr>
</tbody>
</table>
Hepatitis C: State of Medicaid Access

A report by the National Viral Hepatitis Roundtable (NVHR) and the Center for Health Law and Policy Innovation of Harvard Law School (CHLPI) finds that most Medicaid programs are restricting access to a cure for hepatitis C, which kills more Americans each year than all other infectious diseases combined. More than half of Medicaid programs received a "C" or an "F" for severely restricting access to hepatitis C treatment.

See how your state matches up...

BEST 5 STATES
in alphabetical order
Alaska
Connecticut
Massachusetts
Nevada
Washington

WORST 5 STATES
in alphabetical order
Arkansas
Louisiana
Montana
Oregon
South Dakota

#StateofHepC NVHR StateofHepC.org
Hepatitis C: State of Medicaid Access

Sobriety Restrictions

An analysis of 2017 Fee-For-Service (FFS) Medicaid data demonstrates that several Medicaid programs have eliminated sobriety requirements for patients seeking to access hepatitis C (HCV) cures, while others highly restrict access.

2017 Medicaid FFS Sobriety Restrictions for HCV Treatment

#StateofHepC  NVHR  StateofHepC.org

stateofhepc.org
### Psychiatric and Substance Use Disorders

<table>
<thead>
<tr>
<th></th>
<th>Psychiatric Disorder</th>
<th>No Psychiatric Disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substance Use Disorder</td>
<td>Comorbid</td>
<td>Substance Use</td>
</tr>
<tr>
<td>No Substance Use Disorder</td>
<td>Psychiatric</td>
<td>None</td>
</tr>
</tbody>
</table>

- **578 persons with OUD in NESARC sample**
  - Grella et al. (2009) *Addictive Behaviors* 34:498-504
  - 52% Major Depression (7% general pop)
  - 39% Any anxiety disorder (19% general pop)
  - 50% Any personality disorder (9% general pop)
### NESARC, NCS, ECA: Odds Ratio of Association between Alcohol or Drug Dependence and other Disorders

<table>
<thead>
<tr>
<th>Disorder</th>
<th>Alcohol</th>
<th>Drug</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Depression</td>
<td>1.6 - 4.0</td>
<td>2.0 - 9.0</td>
</tr>
<tr>
<td>Dysthymia</td>
<td>2.3 - 3.8</td>
<td>1.3 - 11.3</td>
</tr>
<tr>
<td>Bipolar Disorder</td>
<td>4.6 – 8.0</td>
<td>8.3 – 13.9</td>
</tr>
<tr>
<td>Panic Disorder with Agoraphobia</td>
<td>2.6 – 3.6</td>
<td>4.4 – 10.5</td>
</tr>
<tr>
<td>Social Phobia</td>
<td>1.6 – 2.5</td>
<td>2.2 – 5.4</td>
</tr>
<tr>
<td>PTSD</td>
<td>3.4</td>
<td>3.8</td>
</tr>
<tr>
<td>ADHD</td>
<td>2.8</td>
<td>7.9</td>
</tr>
<tr>
<td>Antisocial Personality</td>
<td>8.3 – 14.7</td>
<td>15.6 – 18.5</td>
</tr>
</tbody>
</table>
### DSM-5 Criteria Substances Use Disorder

<table>
<thead>
<tr>
<th></th>
<th>DSM-IV Abuse</th>
<th>DSM-IV Dependence</th>
<th>DSM-5 Substance Use Disorders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous use</td>
<td>X</td>
<td>–</td>
<td>X</td>
</tr>
<tr>
<td>Social/interpersonal problems related to use</td>
<td>X</td>
<td>–</td>
<td>X</td>
</tr>
<tr>
<td>Neglected major roles to use</td>
<td>X</td>
<td>–</td>
<td>X</td>
</tr>
<tr>
<td>Legal problems</td>
<td>X</td>
<td>–</td>
<td>X</td>
</tr>
<tr>
<td>Withdrawal</td>
<td>–</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Tolerance</td>
<td>–</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Used larger amounts/longer</td>
<td>–</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Repeated attempts to quit/control use</td>
<td>–</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Much time spent using</td>
<td>–</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Physical/psychological problems related to use</td>
<td>–</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Activities given up to use</td>
<td>–</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Craving</td>
<td>–</td>
<td>–</td>
<td>X</td>
</tr>
</tbody>
</table>

Mild: 2-3; Moderate: 4-5; Severe: 6 or >.
Methods to Assess Adherence

- Clinician assessment
- Structured self-report
- Pharmacy refill data
- Pill counts
- modified Directly Observed Therapy (mDOT)
- Electronic monitoring (caps, blister packs, smart pills)
What Level of Adherence is Required?

- Resistance
- Relapse
- 90%
- 12 week course = no more than 8 missed days
- 8 week course = no more than 5 missed days
3 Groups of People Who Use Drugs (PWUD) with HCV

• Clinical trials: *proof of concept*

• Clinical practice: *current opportunity*

• Not yet linked to care: *ongoing challenge*
Research in IFN era finds that IDUs (including active users) can do equally well on:

- Adherence to HCV treatment
- Outcome of HCV treatment – SVR

Context of adequate access to food, housing, medical care, medication, psychiatric care, syringe exchange, opioid substitution therapy, Safer Injection Facilities (8 countries).

Robaeys et al. (2006) Eur J Gastroenterol Hepatol (Benelux)
Bruggmann et al. (2008) J Viral Hepatitis (Switzerland)
Grebely et al. (2010) Eur J Gastroenterol Hepatol (Vancouver)

Lower adherence and SVR has been observed in persons with frequent injecting drug use (daily/every other day) during treatment (Grebely et al. 2015 J Hepatology)
C-EDGE CO-STAR: EFFICACY OF GRAZOPREVIR / ELBASVIR FIXED DOSE COMBINATION FOR 12 WEEKS IN HCV-INFECTED PERSONS WHO INJECT DRUGS ON OPIOID AGONIST THERAPY


1The Kirby Institute, UNSW Australia, 2Yale School of Medicine, 3Montefiore Medical Center and Albert Einstein College of Medicine, 4Institute of Clinical Medicine, 5Auckland Clinical Studies, 6Tel-Aviv Medical Center, 7University of California, San Francisco, 8ID Care, 9China Medical University Hospital, 10Vancouver Infectious Diseases Centre, 11Merck & Co., Inc.
URINE DRUG SCREEN RESULTS:
DAY 1 TO TREATMENT WEEK 12

Immediate Treatment Arm;
EBR/GZR Treatment Phase

Deferred Treatment Arm;
Placebo Phase

- Any drug use of 8 classes*
- Any drug use of 7 classes (excl. cannabinoids)
- Cannabinoids
- Benzodiazepines
- Opiates
- Cocaine
- Amphetamines

* 8 drug classes: amphetamines, barbiturates, benzodiazepines, cannabinoids, cocaine, opiates, phencyclidine, propoxyphene
Buprenorphine

Methadone

Alcohol

Cannabidiol (CBD)

Heroin

Fentanyl (E/G; G/P; L/S, S/V, S/V/V)

“Both glecaprevir and grazoprevir are mild CYP3A4 inhibitors (AUC increases 27% and 34% respectively). In most cases we would deem this increase not clinically significant however we are aware fentanyl can have a narrow therapeutic index and increased concentration in illicit use by these margins could very well be significant in some patients.”

hep-druginteractions.org personal communication
158 PWID with HCV receiving opioid agonist therapy (OAT) were randomized to one of 3 study conditions at 3 OAT programs in the Bronx (Oct 2013-April 2017):

Directly observed treatment (DOT)

Group treatment (GT)

Self-administered individual treatment (SIT)

*Intensive Models of Hepatitis C Care for People Who Inject Drugs Receiving Opioid Agonist Therapy: A Randomized Controlled Trial*  
*Annals of Internal Medicine, May 7 2019*
Dosing and Timing Adherence
Akiyama et al. 2019
**Appendix Table 1. SVR, by Group, for Study Participants Overall and for Those Receiving a Combination DAA Regimen**

<table>
<thead>
<tr>
<th>Group</th>
<th>Overall</th>
<th>Combination DAA Regimen</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Patients, n</td>
<td>SVR, n (%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DOT</td>
<td>51</td>
<td>50 (98)</td>
</tr>
<tr>
<td>GT</td>
<td>48</td>
<td>45 (94)</td>
</tr>
<tr>
<td>SIT</td>
<td>51</td>
<td>46 (90)</td>
</tr>
<tr>
<td>Total</td>
<td>150</td>
<td>141 (94)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Comparison</th>
<th>Difference in SVR (95% CI), percentage points</th>
<th>Difference in SVR (95% CI), percentage points</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT vs. GT</td>
<td>4 (−7 to 16)</td>
<td>5 (−8 to 18)</td>
</tr>
<tr>
<td>DOT vs. SIT</td>
<td>8 (−4 to 20)</td>
<td>10 (−4 to 25)</td>
</tr>
<tr>
<td>GT vs. SIT</td>
<td>4 (−10 to 17)</td>
<td>5 (−10 to 21)</td>
</tr>
</tbody>
</table>

DAA = direct-acting antiviral; DOT = directly observed therapy; GT = group treatment; SIT = self-administered individual treatment; SVR = sustained virologic response.

* No significant differences in SVR were found across the 3 groups (P = 0.152) among all participants or among those receiving combination DAA treatment (P = 0.056), on the basis of multivariable exact logistic regression adjusting for site and the 3 stratifying variables. No missing data were observed for this analysis.
• Greater adherence was associated with SVR, with the odds of SVR 1.81 times higher for each 10% increase in daily adherence and 1.71 times higher for each 10% increase in window adherence.

• Factors significantly associated with poor daily adherence were psychiatric illness at baseline (p=0.048) and drinking alcohol to intoxication in the 30 days before baseline (p=0.028). Drug use was not associated with poor adherence.
Impact of Prescribed Treatment Duration on Hepatitis C Treatment Adherence: Comparison of 8- and 12-Week Treatment With Glecaprevir/Pibrentasvir

Data was pooled from 10 phase 3 clinical trials of naïve patients GT 1-6. G/P for 8 or 12 weeks N= 2086

Not significant:
Current alcohol use
History of IDU

Overall SVR12=97.7%

Jacobosn IM et al. Hep Dart 2019

Table 2. Predictors of Non-adherence

<table>
<thead>
<tr>
<th>Variable</th>
<th>Odds ratio (95% CI)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;80% adherence*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>History of psychiatric disorder (yes vs no)</td>
<td>2.62 (1.54-4.46)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Race (black vs nonblack)</td>
<td>2.45 (1.07-5.64)</td>
<td>.035</td>
</tr>
<tr>
<td>Treatment duration (12 vs 8 weeks)</td>
<td>1.77 (1.03-3.02)</td>
<td>.037</td>
</tr>
<tr>
<td>&lt;90% adherence*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment duration (12 vs 8 weeks)</td>
<td>1.92 (1.39-2.63)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Age, years</td>
<td>0.96 (0.97-0.59)</td>
<td>.003</td>
</tr>
<tr>
<td>HCV GT4 vs GT1</td>
<td>2.37 (1.27-4.42)</td>
<td>.007</td>
</tr>
<tr>
<td>Geographic region (North America vs Europe)</td>
<td>1.63 (1.12-2.36)</td>
<td>.011</td>
</tr>
<tr>
<td>History of psychiatric disorder (yes vs no)</td>
<td>1.52 (1.08-2.14)</td>
<td>.016</td>
</tr>
<tr>
<td>Race (black vs nonblack)</td>
<td>1.93 (1.12-3.33)</td>
<td>.017</td>
</tr>
<tr>
<td>Sex (male vs female)</td>
<td>1.45 (1.06-1.96)</td>
<td>.021</td>
</tr>
<tr>
<td>Presence of polypharmacy* (yes vs no)</td>
<td>1.44 (1.00-2.06)</td>
<td>.047</td>
</tr>
<tr>
<td>HCV GT3 vs GT1</td>
<td>1.47 (1.00-2.15)</td>
<td>.050</td>
</tr>
</tbody>
</table>

Patients missing any independent variables were excluded from analyses.
Outcome is non-adherence (<80% or <90%) during any time interval.
*Variables examined but not selected by the stepwise logistic regression model included comorbidity status; age, years; body mass index (kg/m²); substitute opioid substitution therapy; injection drug use; tobacco use; alcohol use; baseline HCV RNA level (Log10 IU/mL); sex; ethnicity; geographic region; HIV-1 infection; and HCV genotype.
**Variables included in the stepwise logistic regression model with a P value >.05: ethnicity; geographic region (rest of world vs North America); HCV genotypes 2, 3, 5; HIV-1 infection. Variables examined but not selected by the stepwise logistic regression model included comorbidity status; body mass index (kg/m²); substitute opioid substitution therapy; injection drug use; tobacco use; alcohol use; baseline HCV RNA level (Log10 IU/mL).
*Polypharmacy was defined as ≥2 nonconcurrent medications.
CI, confidence interval; GT, genotype; HCV, hepatitis C virus; HIV-1, human immunodeficiency virus 1; RNA, ribonucleic acid.
Provider utilized scales/assessment tools to evaluate the readiness of the patient:

- SAMHSA HRSA Center for Integrated Health Solutions-Drug & Alcohol Screening Tools- available at: https://www.integration.samhsa.gov/clinical-practice/screening-tools#drugs

  or

- Psychosocial Readiness Evaluation and Preparation for Hepatitis C Treatment (PREP-C) available at: https://prepc.org/
SAMHSA Screening Tools

- Alcohol Use Disorders Identification Test-C (AUDIT-C) 3 items alcohol screen
- Drug Abuse Screen Test (DAST-10) 10 item
- CAGE-AID – 5 item alcohol and drug use screen
- Screening, Brief Intervention, and Referral to Treatment (SBIRT)
  
  https://www.integration.samhsa.gov/clinical-practice/sbirt
Factors Affecting Accuracy of Self-reported Substance Use

- Patient state of sobriety
- Social desirability
- Rapport with assessor
- Confidentiality concerns
- Likelihood of verification
- Interval asked about
- Clarity of the questions
- Motivation (to get treatment; avoid harm to self-esteem; avoid judgment)
- Cognitive processes (attention, verbal comprehension, retrieval; recency bias)

*Babor, Brown & DelBoca (1990) Behavioral Assessment 12, 5-31.*
**Recommendations for Screening and Treatment of HCV Infection in People Who Inject Drugs (PWID)**

<table>
<thead>
<tr>
<th>RECOMMENDED</th>
<th>RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual HCV testing is recommended for PWID with no prior testing, or past negative testing and subsequent injection drug use. Depending on the level of risk, more frequent testing may be indicated.</td>
<td>IIa, C</td>
</tr>
<tr>
<td>Substance use disorder treatment programs and needle/syringe exchange programs should offer routine, opt-out HCV-antibody testing with reflexive or immediate confirmatory HCV-RNA testing and linkage to care for those who are infected.</td>
<td>IIa, C</td>
</tr>
<tr>
<td>PWID should be counseled about measures to reduce the risk of HCV transmission to others.</td>
<td>I, C</td>
</tr>
<tr>
<td>PWID should be offered linkage to harm reduction services when available, including needle/syringe service programs and substance use disorder treatment programs.</td>
<td>I, B</td>
</tr>
<tr>
<td>Active or recent drug use or a concern for reinfection is not a contraindication to HCV treatment.</td>
<td>IIa, B</td>
</tr>
</tbody>
</table>

**Recommendation for Testing for Reinfection in People Who Inject Drugs (PWID)**

<table>
<thead>
<tr>
<th>RECOMMENDED</th>
<th>RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>At least annual HCV-RNA testing is recommended for PWID with recent injection drug use after they have spontaneously cleared HCV infection or have been successfully treated.</td>
<td>IIa, C</td>
</tr>
</tbody>
</table>
RECOMMENDATION:
Pre-therapeutic assessment should include an evaluation of housing, education, cultural issues, social functioning and support, finances, nutrition and drug and alcohol use. PWID should be linked into social services, and peer support if available.

Class I, Level B
Psychosocial Readiness Evaluation & Preparation for HCV Treatment (PREP-C)

Developed to guide how best to prepare patients to succeed on treatment; not to decide who should go on treatment
Goals of Using PREP-C

• Identify modifiable areas of psychosocial functioning which are predictive of HCV treatment adherence prior to HCV treatment initiation in order to be able to create a treatment plan to improve functioning in these areas prior to HCV treatment initiation.

• Identify non-modifiable areas of psychosocial functioning which are predictive of HCV treatment adherence prior to HCV treatment initiation in order to be able to plan for and take these factors into account during treatment.

• Level of support and resources available in treatment setting can be used to inform evaluation of readiness.
Patient Level Barriers

- Motivation
- Information
  - Medication Adherence
  - Self-Efficacy
  - Social Support and Stability
  - Alcohol and Substance Use
  - Psychiatric Stability
  - Energy Level
  - Cognitive Functioning

PrepC.org

Psychosocial Readiness

HCV Treatment Adherence
Principles Guiding Development of PREP-C Assessment Tool

- Suitable to be administered by service providers from diverse disciplines
- Structured interview rather than self-report
- Not to be used to “screen people out” of treatment but to identify areas which can be improved
- Can be used with HCV mono-infected and HIV/HCV co-infected clients
- Provides opportunity for immediate intervention and provision of resources
- Leads to plan for (referral to) further evaluation and treatment
- Can be used in a diverse range of HCV treatment settings
<table>
<thead>
<tr>
<th>Patient Characteristics (n=349)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Age in yrs mean (sd)</td>
<td>57.9 (10.2)</td>
</tr>
<tr>
<td>Race/Ethnicity (%)</td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>38.1</td>
</tr>
<tr>
<td>Hispanic</td>
<td>35.5</td>
</tr>
<tr>
<td>White</td>
<td>20.6</td>
</tr>
<tr>
<td>Other</td>
<td>5.7</td>
</tr>
<tr>
<td>Gender - males (%)</td>
<td>66.2</td>
</tr>
<tr>
<td>HIV-positive (%)</td>
<td>10.0</td>
</tr>
<tr>
<td>Medicaid or Medicare insurance (%)</td>
<td>100.0</td>
</tr>
<tr>
<td>Ever injected drugs (%)</td>
<td>64.8</td>
</tr>
<tr>
<td>Injected drugs in last year (%)</td>
<td>11.2</td>
</tr>
<tr>
<td>On OST (%)</td>
<td>35.2</td>
</tr>
<tr>
<td>Heroin use in last year (%)</td>
<td>14.0</td>
</tr>
<tr>
<td>Cocaine/Crack use in last year (%)</td>
<td>6.0</td>
</tr>
<tr>
<td>Non-prescribed benzo use in last year (%)</td>
<td>5.4</td>
</tr>
</tbody>
</table>

*Weiss, 5th International Symposium on Hepatitis Care in Substance Users, Oslo, September 2016*
Psychosocial Domains to Target for Improvement:
% Requiring Intervention per Domain

- Motivation: 4.5%
- Information: 64.9%
- Medication Adherence: 21.8%
- Self-Efficacy: 3.1%
- Social Support & Stability: 66.8%
- Alcohol & Substance Abuse: 29.5%
- Psychiatric Stability: 40.4%
- Energy Level: 37.4%
- Cognitive Functioning: 31.5%

Weiss, 5th International Symposium on Hepatitis Care in Substance Users, Oslo, September 2016
Continuum of Physical and Behavioral Health Care Integration

- Coordinated Care
  - Screening
  - Navigators
- Co-located Care
  - Co-location
  - Health Homes
- Integrated Care
  - System-Level Integration

Integrating Physical and Behavioral Health Care: Promising Medicaid Models
The Kaiser Commission on Medicaid and the Uninsured Issue Brief, 2/2014
Needle and Syringe Programs (NSP) and Opioid Substitution Therapy (OST) Help to Optimize HCV Treatment as Prevention

Large reductions in HCV chronic prevalence over 10 years requires:

• HCV treatment among people who inject drugs (PWID)
• Scaling up OST
• Scaling up NSP

Martin NK, et al. Clinical Infectious Diseases 2013
Medical and Behavioral Approaches to Engage PWID Into Care for HCV Infection

Gonzalez, Stevan A.; Fierer, Daniel S.; Talal, Andrew H. Addictive Disorders & Their Treatment 16(2, Supplement 1):S1-S23, June 2017.
Access to HCV Treatment for Patients with Mental Health or SUD

Predictors of HCV treatment in the pre-DAA (1/1/11 – 12/31/13) and post-DAA (1/1/14-2/28/17) in 4 clinical cohorts of 14,501 persons (Dallas, Oakland, New Orleans, Richmond)

<table>
<thead>
<tr>
<th></th>
<th>Pre-DAA</th>
<th>Post-DAA</th>
<th>P value</th>
<th>Pre-DAA</th>
<th>Post-DAA</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% of Untreated</td>
<td>% of Treated</td>
<td></td>
<td>% of Untreated</td>
<td>% of Treated</td>
<td></td>
</tr>
<tr>
<td></td>
<td>with</td>
<td>with</td>
<td>P value</td>
<td>with</td>
<td>with</td>
<td></td>
</tr>
<tr>
<td>Major Depression</td>
<td>8.6</td>
<td>4.9</td>
<td>0.0476</td>
<td>5.8</td>
<td>4.0</td>
<td>0.0543</td>
</tr>
<tr>
<td>Other Mood/psychiatric disorder</td>
<td>12.8</td>
<td>5.3</td>
<td>0.0008</td>
<td>8.1</td>
<td>3.5</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Manic/bipolar disorder</td>
<td>5.5</td>
<td>0</td>
<td>0.0003</td>
<td>3.6</td>
<td>0.3</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Alcohol Use Disorder</td>
<td>12.0</td>
<td>3.5</td>
<td>&lt;0.0001</td>
<td>9.0</td>
<td>4.0</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Opioid Use Disorder</td>
<td>4.4</td>
<td>0.4</td>
<td>0.0035</td>
<td>4.5</td>
<td>0.2</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>

Jain et al. 2019, Hepatology, 69, 51-63
Continuum of care in PWID

In HCV Care = seeing a specialist or having another RNA > 180 days from 1st RNA result

Treatment = report that treatment initiated or the infection resolved

Poor linkage to care and very low treatment rates, especially in younger PWID

Trooskin et al, AASLD 2018, Abstract 1632
Harm Reduction

A set of practical strategies that reduce the negative consequences of drug use and other risk behaviors (e.g. sexual risk) in relation to drug use:

- Syringe access
- Overdose prevention (naloxone)
- Medication-assisted treatment (methadone, buprenorphine, naltrexone)
Self-efficacy: Confidence in one’s ability to achieve intended results

HCV treatment is an enactive mastery experience that builds self efficacy

Cure Challenge – What is your next health challenge?

Opportunity to intervene to change risk of reinfection

A systematic review suggests that HCV treatment has a positive impact on reducing IDU frequency and injection equipment sharing

Caven et al. Int J Drug Policy epub 10 May 2019
ANCHOR Study
Rosenthal et al. EASL 2018

- Active PWID not on MAT can be successfully initiated on buprenorphine during the course of HCV treatment
- Patients treated at a harm reduction drop-in center in Washington, DC
- 61 patients not on MAT at screening
- 39 started on buprenorphine
- 26 retained on buprenorphine
Retention in buprenorphine treatment is associated with improved HCV care outcomes (Norton et al. 2017)

- EHR retrospective review
- Persons with OUD who received at least one buprenorphine prescription between 1/09-1/14
- The only patient characteristic associated with completion of HCV care milestones was retention in buprenorphine treatment.
- Patients retained (vs. not retained) were more likely to be referred for HCV specialty care (63% vs. 34%), attend an HCV specific evaluation (41% vs 21%), and be offered HCV treatment (22% vs. 9%).
Treatment of Opioid Use Disorder (OUD)

- Buprenorphine and methadone – most effective treatment options for OUD
- Both are opioid agonists – activate opiate receptors
  - Relieve withdrawal and cravings
  - Long-acting, block effects of other opioids
- Better outcomes with longer treatment
- Some important differences

<table>
<thead>
<tr>
<th>Methadone</th>
<th>Buprenorphine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full agonist</td>
<td>Partial agonist: ceiling to side effects; high safety profile</td>
</tr>
<tr>
<td>Decades of evidence on effectiveness</td>
<td>Approved for outpatient use in US in 2002</td>
</tr>
<tr>
<td>Available only in opioid treatment programs</td>
<td>Available in primary care and other outpatient settings</td>
</tr>
<tr>
<td>• Highly regulated</td>
<td>• By prescription</td>
</tr>
<tr>
<td>• Supervised dosing</td>
<td>• Prescribers need certification</td>
</tr>
<tr>
<td>• Take home dosing with treatment progression</td>
<td></td>
</tr>
</tbody>
</table>
Buprenorphine and HCV Considerations

- Retention in opioid treatment with buprenorphine increases HCV linkage, care, and treatment
- Among HCV patients in DAA trial, cure rates equivalent (and high, 96-98%) for those being treated with buprenorphine vs not\(^1\)
- Treating OUD can reduce new HCV infections and re-infections\(^2,3\)
- No interactions between buprenorphine and DAA HCV medications
  - Guidelines do not suggest any dose changes

Why Offer Buprenorphine Treatment In Primary Care/HCV Treatment Settings?

- Effective treatment for opioid use disorder
  - It works!
  - Standard of care
- Increases HCV linkage, care, and treatment
- Can integrate with HCV treatment and other chronic conditions
- Reduces stigma, fragmentation of care
- Satisfying part of clinical practice
  - Can see rapid and substantial improvement in well-being and functioning of patients
NYC Health Department Resources to Help Providers with Buprenorphine Integration

- Buprenorphine Training and Technical Assistance Initiative provides (free):
  - Buprenorphine waiver trainings for NYC physicians, physician assistants and nurse practitioners to meet SAMHSA waiver requirements
  - Technical assistance to implement buprenorphine prescribing into practice
  - Mentoring by experienced buprenorphine prescribers
  - A buprenorphine learning community
- Buprenorphine educational materials for patients and medical providers available on NYC Health Department website

- Email buprenorphine@health.nyc.gov for more information
Summary

• Assessed appropriately, information about the patient’s substance use behavior can be used to optimize the patient’s chances of achieving SVR

• In settings where patients with active drug use are treated, HCV treatment must also address harm reduction, reinfection risk, and drug user health

• Potential risks to patient that come from assessing substance use can be minimized when health care providers are appropriately trained