


Key Populations: Identification and Management of HCV in People Who Inject Drugs

Prevalence of HCV Among People Who Inject Drugs

Injection drug use (IDU) is the most common risk factor for HCV infection in the United States and Europe, with an HCV seroprevalence of 10% to 70% depending on geographic location and duration of IDU exposure ([Hagan, 2008](#)); ([Amon, 2008](#)); ([Nelson, 2011](#)). In this section, the term people who inject drugs (PWID) includes individuals who are actively using drugs and those who have previously used injection drugs.

The first few years after an individual begins to inject drugs constitute a high-risk period in which the rate of HCV infection can exceed 40% ([Maher, 2006](#)). According to the National Survey on Drug Use and Health, heroin use has increased across the US among men and women, most age groups, and all income levels ([CDC, 2015b](#)). IDU accounts for the majority of new HCV infections (approximately 70%) and is the driving force in the perpetuation of the epidemic. Given these facts and the absence of a vaccine against HCV, testing and linkage to care combined with HCV treatment have the potential to dramatically decrease HCV incidence and prevalence ([Martin, 2013](#)); ([NAS, 2017](#)).

Recommendations for Screening and Treatment of HCV Infection in People Who Inject Drugs (PWID)

RECOMMENDED	RATING 
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.	Ila, C
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.	Ila, C
PWID should be counseled about measures to reduce the risk of HCV transmission to others.	I, C
PWID should be offered linkage to harm reduction services when available, including needle/syringe service programs and substance use disorder treatment programs.	I, B
Active or recent drug use or a concern for reinfection is not a contraindication to HCV treatment.	Ila, B

HCV Testing Among PWID

All individuals who currently inject drugs or have used injection drugs in the past should be tested for HCV infection. Data are limited regarding the optimal interval for repeat testing among individuals actively using drugs. An HCV-antibody test is recommended and if the result is positive, current infection should be confirmed by immediate HCV-RNA testing (see [HCV Testing and Linkage to Care](#)). This can be accomplished using phlebotomy for a combined reflex test performed by a laboratory, which is appropriate for clinical settings. In certain community settings, a point-of-care antibody test with an immediate blood draw for a confirmatory HCV-RNA test may be implemented.

Among persons at risk of HCV reinfection after previous spontaneous or treatment-related viral clearance, HCV-RNA

testing is recommended because an HCV-antibody test is expected to remain positive. Among persons with a negative HCV-antibody test who are at high risk for a new HCV infection due to current IDU, testing for HCV RNA or follow-up testing for HCV antibody is recommended if HCV exposure may have occurred within the past 6 months.

Integration of HCV testing services into harm reduction services provided by medication-assisted treatment (MAT) programs, needle/syringe programs, and acute detoxification programs provide an opportunity for routine screening in this key population ([Harris, 2010](#)); ([Aronson, 2017](#)).

Linkage to HCV Care and Treatment Adherence

Ideally, treatment of HCV-infected PWID should be delivered in a multidisciplinary care setting with services to reduce reinfection risk and manage the common social and psychiatric comorbidities in this population. Regardless of the treatment setting, recent and active IDU should not be seen as an absolute contraindication to HCV therapy. There is strong evidence from various settings in which PWID have demonstrated adherence to treatment and low rates of reinfection, countering arguments that have been commonly used to limit HCV therapy access in this patient population ([Aspinall, 2013](#)); ([Hellard, 2014](#)); ([Grebeley, 2011](#)); ([Dore, 2016](#)). Indeed, combining HCV treatment with needle/syringe exchange and opioid substitution treatment programs in this population with a high prevalence of HCV infection has shown great value in decreasing the burden of HCV disease.

Modeling studies illustrate the high return on the modest investment of addressing this often-ignored segment of the HCV-infected population ([Martin, 2013b](#)). Conversely, there are no data to support the utility of pretreatment screening for illicit drug or alcohol use in identifying a population more likely to successfully complete HCV therapy. These requirements should be abandoned because they create barriers to treatment, add unnecessary cost and effort, miss an opportunity to decrease HCV transmission, and potentially exclude populations that are likely to obtain substantial benefit from therapy. Instead, scaling up HCV treatment in PWID is necessary to positively impact the HCV epidemic in the US and globally.


In addition, recent hepatitis C test-and-link programs have identified the use of patient navigators or care coordinators to be an important intervention in overcoming challenges to linkage to and retention in care ([Trooskin, 2015](#)); ([Coyle, 2015](#)); ([Ford, 2017](#)). The Check Hep C program in New York City compared services delivered at 2 clinical care sites to 2 sites that linked patients to off-site care. Participants receiving clinical care co-located with testing services had higher odds of initiating treatment than those linked to off-site care ([Ford, 2017](#)). Ongoing assessment of efficacy and comparative effectiveness of this and additional strategies is a crucial area of future research for patients with chronic HCV. Replication and expansion of best practices and new models for linkage to HCV care will be crucial to maximize the public health impact of newer HCV treatment paradigms.

HCV Treatment Among PWID

Clinical trials among PWID reporting current IDU at the start of HCV treatment and/or continued use during therapy demonstrate SVR12 rates approaching 95% ([Dore, 2016](#)); ([Grebeley, 2018](#)). Moreover, high SVR rates among PWID are not limited to clinical trials but are also observed in clinical practice settings. A cohort study was conducted with 89 patients initiating HCV treatment between January 2014 and August 2015 at a primary care clinic in the Bronx, New York. Four patient groups were compared: no active drug use or MAT; no active drug use with MAT; active drug use without MAT; and active drug use with MAT. The study found that regardless of active drug use or MAT, patients who received direct-acting antiviral (DAA) therapy at this urban primary care clinic achieved high HCV cure rates (SVR \geq 95%) ([Norton, 2017](#)).

Furthermore, MAT does not compromise HCV treatment outcomes. Similar SVR12 rates are achieved by PWID engaged in MAT compared to individuals not engaged in MAT in clinical trials involving various DAA regimens ([Feld, 2014](#)); ([Lalezari, 2015](#)); ([Grebeley, 2016](#)); ([Zeuzem, 2015](#)); ([Dore, 2016](#)). HCV-infected patients receiving MAT who were treated with elbasvir/grazoprevir had high rates of adherence to antiviral treatment and SVR12 rates $>$ 89% regardless of ongoing IDU ([Dore, 2016](#)). Similarly, an SVR12 of 97.4% was reported in a clinical trial evaluating ombitasvir/paritaprevir/ritonavir plus dasabuvir and ribavirin for 12 weeks among patients receiving MAT ([Lalezari, 2015](#)). Further, an analysis of a clinical trial evaluating outcomes of sofosbuvir/velpatasvir treatment in patients receiving MAT (n=51) compared to those not receiving MAT (n=984) demonstrated that MAT did not significantly reduce treatment completion, antiviral adherence,

SVR12, or safety ([Grebely, 2016](#)).

Recommendation for Testing for Reinfection in People Who Inject Drugs (PWID)	
RECOMMENDED	RATING 
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.	Ila, C

Reinfection

As HCV therapy is expanded to populations of PWID with high-risk behaviors for re-exposure, acknowledgement that HCV reinfection will occur in some individuals is critical, and appropriate strategies must be in place to maximize prevention of reinfection and offer retreatment for reinfection ([Grebely, 2017](#)). Importantly, the rate of HCV reinfection in the PWID population is lower (2.4/100 person-years) than the rate of incident HCV infection in the general population of PWID (6.1 to 27.2/100 person-years), although the rate of reinfection increases with active or ongoing IDU (6.44/100 person-years) and available data on follow-up duration are limited ([Aspinall, 2013](#)); ([Grady, 2013](#)).

Data suggest that reinfection is rare in drug users who clear HCV with therapy even if they continue to inject drugs, as long as steps are taken to minimize the risk. Studies of HCV reinfection in PWID have demonstrated rates of reinfection post SVR ranging from 1 to 5/100 person-years in patients who have ever injected drugs, increasing to 3 to 33/100 person-years in patients with continued injecting risk behavior ([Midgard, 2016b](#)); ([Marco, 2013](#)); ([Grebely, 2010](#)); ([Grebely, 2012](#)); ([Bate, 2010](#)); ([Currie, 2008](#)); ([Dalgard, 2002](#)); ([Grady, 2012](#)). Relapse into drug use has been associated with HCV reinfection after cure ([Midgard, 2016b](#)) while interventions that reduce drug use, such as utilization of opiate agonist therapy and mental health services, have been associated with a reduction in HCV reinfection risk ([Islam, 2017](#)). These services should be made available to PWID. PWID found to be HCV reinfected should be retreated. Retreatment of a new reinfection should be as detailed in the [Initial Treatment](#) section.

Increasing the HCV treatment rate among the PWID population would reduce numbers of new HCV and liver-related disease cases ([Jiang, 2017](#)). In a study that evaluated reinfection and injecting risk behavior following DAA therapy, participants on MAT for ≥3 months had a reinfection rate of 2.3/100 person-years, with a persistent reinfection rate of 1.6/100 person-years and a reinfection rate of 4.2/100 person-years among those who reported IDU ([Dore, 2017](#)).

Harm Reduction

Harm reduction is a way of preventing disease and promoting health that “meets people where they are” and provides the tools and information they need to keep themselves and those around them well ([Logan, 2010](#)). Harm reduction places drug use within the larger sociopolitical spheres of poverty, criminalization, and mental health. Accepting that not everyone is ready or able to curtail or stop high-risk behavior, harm reduction focuses on promoting a spectrum of scientifically proven, practical strategies for reducing the negative consequences of drug use and other high-risk behaviors. Harm reduction strategies include but are not limited to: condom distribution; access to sterile syringes; medication-assisted treatment for opioid dependence (such as methadone, buprenorphine and naltrexone); safe injection spaces; and overdose prevention. Heroin overdose deaths in the US increased 286% from 2002 to 2013 ([CDC, 2015b](#)). Naloxone should be prescribed to all PWID. Broad implementation of harm reduction strategies has the potential to significantly impact the HCV epidemic.

Medication-Assisted Treatment

MAT options have been developed for drugs such as heroin, oxycodone, and morphine. The therapies (agonist pharmacotherapy and methadone maintenance) were identified to provide a less harmful opioid (eg, methadone) or an opioid-receptor agonist (eg, buprenorphine) under medical supervision in both specialty and outpatient clinics. Several reviews have identified opioid substitution therapy as effective in reducing illicit opioid use ([Mattick, 2009](#)); ([Mattick, 2014](#)) and opioid-related death and all-cause mortality ([Degenhardt, 2009](#)); ([Sordo, 2017](#)), and improving quality of life ([Lawrinson, 2008](#)); ([Ward, 1999](#)). Participation in methadone maintenance treatment has been demonstrated to be protective against hepatitis C incidence among PWID, with a dose-response protective effect with increasing methadone exposure on hepatitis C incidence ([Nolan, 2014](#)).

Syringe Service Programs

Syringe service programs (SSPs) were developed to reduce the spread of bloodborne diseases among injection drug users. These programs provide PWID with sterile syringes and other equipment (cookers, filters, sterile water, alcohol swabs) to reduce the risk of bloodborne disease (eg, HIV and HCV) transmission associated with sharing injection equipment. These programs were developed in the 1980s and often include drug treatment referrals, peer education, and HIV prevention. Areas with greater syringe access through SSPs have lower rates of hepatitis C among PWID. A prospective study of PWID in New York City found a significant decline in HCV rates from 1990 to 2001, corresponding to an increase in the number of syringes distributed by SSPs during this period ([Des Jarlais, 2005](#)).

Benefit of Treatment to Reduce HCV Transmission

Persons cured of chronic HCV no longer transmit the virus to others. As such, successful HCV treatment benefits public health. Several health models have shown that even modest increases in successful HCV treatment among PWID can decrease prevalence and incidence ([Martin, 2013](#)); ([Durier, 2012](#)); ([Martin, 2013b](#)); ([Hellard, 2014](#)). Models developed to estimate the impact of HCV testing and treatment on the burden of HCV at a country level reveal that large decreases in HCV prevalence and incidence are possible as more persons are successfully treated ([Wedemeyer, 2014](#)); ([Martin, 2015](#)). Elimination of HCV among PWID will also require scaling up harm reduction services ([Fraser, 2018](#)).

Last update: May 24, 2018

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