Scaling Up Risk-based Hepatitis C Screening in the United States

A report from a Think Tank convened by Project Inform, held September 17 & 18, 2013, Washington, DC
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Hepatitis C virus (HCV) is a major public health problem. It is the most common blood-borne disease in the United States, and it is also the “deadliest” (1). With approximately 12,000-15,000 deaths a year, HCV is the leading cause of mortality from liver disease, and these deaths are expected to rise (2). Indeed, recent data from the CHiECS Study suggests that HCV as a cause of death is severely under-reported and may account for as many as 80,000 deaths annually in the U.S. (3). Additionally, HCV is the leading cause of hepatocellular carcinoma (HCC) and leading indication for liver transplants in the United States. Both HCC and liver transplants are expected to continue to rise in the years to come.

Despite all of the suffering that results from HCV, it remains a “silent epidemic” in which between 50-75% of people who are living with HCV are unaware of their infection (4). Among the populations most at risk for both infection of HCV and the negative sequelae from this disease are persons who inject drugs (PWIDs), persons who formerly injected drugs (PWFIDs), people who use non-injection drugs, people who are incarcerated or have a history of incarceration, and HIV-infected persons who practice condomless sex [especially men who have sex with men (MSM)]. In spite of the best efforts of people living with HCV and advocates at all levels, the needs for HCV awareness, prevention and screening needs for these populations have largely gone unmet.

It is this challenge that led Project Inform to hold the think tank “Scaling Up Risk-Based HCV Screening in the United States: Putting Recommendations into Action” (Think Tank). On September 17 and 18, 2013, a group of 29 advocates, policy experts, clinicians, and public health officials convened in Washington D.C. to discuss the barriers to and enablers of HCV screening in people who are at risk for the virus.

At the time that the Think Tank was conceived, there were questions regarding the effectiveness of risk-based HCV screening. The Centers for Disease Control and Prevention (CDC) had released updated HCV screening guidelines that included the one-time screen of people born between 1945-1965 (baby boomers), in addition to their previous 1998 risk-based ones. In a review of these recommendations, The United States Preventive Services Task Force (USPSTF) issued their draft recommendations for HCV screening for both the 1945 through 1965 birth cohort (the so-called “baby boomer” guidelines) and for risk-based populations. Although the draft recom-
recommendations held promise for screening the risk-based populations, the screening of the birth cohort received a recommended “C” grade, jeopardizing the possibility of insurers covering screening in this population (5). In response, due to a large effort by advocates, the USPSTF changed their birth cohort grade to a “B,” which has positive consequences for public and private health insurance coverage of screening (6).

In addition to the USPSTF screening guidelines, two other developments have the potential to significantly impact the HCV epidemic: implementation of the Affordable Care Act (ACA) and a new era of HCV treatment with direct acting antivirals (DAAs) that can be used without pegylated interferon, which has significant side effects. Improving access to care for people at risk for HCV has the potential to create new opportunities to offer HCV testing. Similarly, newer treatment regimens that are easier to take, shorter in duration, and have fewer side effects may motivate both medical providers and advocates to screen for HCV in their patients at risk for infection, including people who are actively using substances. These new treatments may also encourage people at risk for HCV to ask for the test (7), as many were discouraged in the past by the difficulties of interferon-based treatment regimens. Finally, in this reformed health care system, primary care providers may be well-positioned and more open to manage and possibly treat HCV as less toxic therapies become the standard of care.

Significant attention has been given to the birth cohort screening recommendations, and rightly so as they have the potential of uncovering at least 800,000 previously unknown infections and averting over 120,000 deaths (2). The public health impact of these recommendations cannot be overstated. That said, many in the HCV advocacy field believe that the excitement and attention given to these recommendations have over-shadowed the equally important recommendations for screening people at risk for HCV infection who fall outside the birth cohort.

Project Inform convened this Think Tank in response to a belief among many HCV advocates that with all of the excitement and attention given to the Centers for Disease Control and Prevention (CDC) birth cohort screening guidelines, the risk-based guidelines would not receive the priority and attention they warrant. This is also important, because many health care providers are not well versed in testing and treating those at risk of HCV infection outside of the birth cohort (8). In order to adequately address the HCV epidemic, we must implement the birth cohort guidelines, while also improving outreach and screening efforts in the risk-based populations described by both the CDC and the USPSTF.
To help get us there, the following objectives guided the work of the Think Tank:

1. Identify enablers and constraints to HCV screening experienced by PWIDs, people who formerly injected drugs, non-injecting drug users (specifically, people who use drugs intranasally, as well as people who smoke crack cocaine and methamphetamine), people in prison (or with a history of incarceration), and those at risk for sexual exposure (primarily focused on HIV-infected MSM);

2. Stimulate discussion about scaling-up risk-based HCV screening in a reformed health care system;

3. Explore successful HCV screening models and innovative ideas to improve HCV screening;

4. Develop action items and tasks that result from various meeting activities;

5. Establish work groups to fulfill the action items beyond the meeting and explore ways to implement these ideas.

It is our intent for the discussions held throughout the meeting and the resulting recommendations and actions to lead to one or more work groups that develop initiatives to engage this highly stigmatized population into HCV screening and linkage to care — and ultimately decrease HCV transmission and address health disparities.

This report provides background information on the issues and challenges of risk-based screening, a summary of the Think Tank, and a list of recommendations and actions proposed by the group to create opportunities to expand HCV screening and services to improve the health of those living with or at risk for HCV.
In 2010, the Institute of Medicine (IOM) released a comprehensive report on the state of viral hepatitis in the United States. In this report, the IOM identified significant gaps in viral hepatitis services overall, particularly within groups that are significantly impacted by HCV morbidity and mortality. For nearly everyone working in the field of HCV, from the highest levels of the CDC to the syringe exchange outreach worker on the street, this was not surprising.

Hepatitis C has long been an under-recognized and under-funded communicable and chronic disease and, as a consequence, few services and little infrastructure exist for awareness campaigns, screening, and linkage to medical care and treatment. Furthermore, the populations covered at the Think Tank are often marginalized and traditionally underserved. Despite the limited dollars available, and the stigma often attached to the populations most heavily impacted by HCV, it is a testament to the commitment of these groups and the people who serve them that we have excellent model programs and services from which to draw inspiration for replication and adaptation.

Since the publication of the IOM report, several positive developments in the field of HCV diagnostics, treatment and public policy occurred. In 2011, a rapid HCV test, the OraQuick HCV Rapid Antibody Test, was approved by the FDA, creating opportunities for point-of-care testing in various settings. Two new HCV drugs, telaprevir and boceprevir, were approved in 2011, and two more, sofosbuvir and simeprevir were approved in 2013, significantly improving rates of sustained virologic response (SVR), which generally means maintaining an undetectable HCV level for at least 12 weeks after HCV therapy is concluded. In the next few years, newer treatments will prove to be even more effective with shorter treatment durations and minimal side effects. These improvements serve as the clinical foundation for better services for populations at risk for and living with HCV.

In direct response to the IOM report, the United States Department of Health and Human Services (DHHS) convened the Viral Hepatitis Interagency Working Group, comprised of members from various DHHS agencies, including CDC, Health Resources and Services Administration (HRSA), and Substance Abuse and Mental Health Services Administration (SAMHSA). In 2011, the Working Group developed the first “Action Plan for the Prevention, Care and Treatment of Viral Hepatitis” for 2011-2013 (Action
Plan). This comprehensive document served as the blueprint for the federal response to HCV, as well as hepatitis B, although we did not address hepatitis B during the Think Tank.

Out of this commitment to improving HCV services, we have seen several positive developments in screening recommendations and new awareness campaigns (e.g., CDC’s “Know More Hepatitis” campaign). Several government agencies, university medical schools, and professional organizations have developed materials and trainings to improve HCV service provision across a variety of settings. Additionally, several work groups have been formed and meetings held to advance the goals of the Action Plan, with detailed reports to monitor national progress. We still have far to go, as demonstrated by the Obama Administration’s recent release of a renewed and revised Action Plan for 2014-2016, on April 3, 2014.

These recent achievements notwithstanding, as a consequence of a previously fractured system of HCV services, the United States has a significant number of people infected with HCV who do not know it. The IOM report lists five core components for a comprehensive approach to addressing viral hepatitis: “outreach and awareness, prevention of new infections, identification of infected people, social and peer support, and medical management of infected people” (9)).

The Think Tank was conceived specifically to address the component related to identifying new infections, specifically among those at high risk. Throughout the meeting we indirectly touched upon the other components, as well. For example, outreach and awareness is a necessary prerequisite for people to even know about their risk or where to go for testing, and social peer support has been shown to encourage linkage and retention to care (10). As we moved through the various sessions of the Think Tank, we gave consideration to what happens to an individual before, during, and after HCV screening.

**HCV Risk:**
**Guidelines, Definitions and Populations**

Hepatitis C is a blood-borne infection in which transmission occurs primarily through blood-to-blood contact with an infected person. The primary modes of transmission occur for people who share injection drug use equipment (e.g., syringes, cookers, cotton, water), and these practices account for most new infections (11). Ad-
ditional risk factors include, but are not limited to, needlesticks in health care settings, mother-to-child transmission (particularly in HIV/HCV co-infected mothers), use of non-sterile tattooing or body piercing equipment, receiving a blood transfusion or blood products prior to 1992, and sexual transmission (particularly in HIV-infected MSM) (6, 12, 13).

There is no shortage of HCV screening guidelines available for clinicians to use to guide their practice. In a review of HCV screening, Edlin lists a total of nine separate recommendations from various professional organizations and government agencies (1). The CDC and the USPSTF have identified slightly different risk populations, with some overlapping categories. The recommendations are outlined below.

In 1998, the CDC issued recommendations for screening of HCV and listed the following risk factors as reasons for routine HCV testing:

Persons who should be tested routinely for HCV infection based on their risk for infection:

- Persons who ever injected illegal drugs, including those who injected once or a few times many years ago and do not consider themselves as drug users.
- Persons with selected medical conditions, including
  - persons who received clotting factor concentrates produced before 1987;
  - persons who received clotting factor concentrates produced before 1987;
  - persons who received clotting factor concentrates produced before 1987;
- Prior recipients of transfusions or organ transplants, including
  - persons who were notified that they received blood from a donor who later tested positive for HCV infection;
  - persons who received a transfusion of blood or blood components before July 1992; and
  - persons who received an organ transplant before July 1992.

Persons who should be tested routinely for HCV infection based on a recognized exposure

- Healthcare, emergency medical, and public safety workers after needle sticks, sharps, or mucosal exposures to HIV-positive blood, and
- Children born to HCV-positive women.


In addition to these recommendations, the CDC has several other guidelines that are relevant to risk-based screening. “Recommendations for the Identification of Chronic
Hepatitis C Virus Infection among Persons Born during 1945-1965” were released in 2012 (4). They call for a single, one-time HCV test with no needed discussion about risk factors. It is worth noting here that although this is a population-based screening recommendation, many individuals within this “birth cohort” have engaged in one or more of the risk factors identified by both the CDC and USPSTF. A population-based approach such as this is able to screen for HCV and bypass any stigma associated with current or past risk behaviors, a potential barrier when using a risk-based approach only.

The CDC’s 2010 ”Sexually Transmitted Diseases Treatment Guidelines” include risk-based recommendations that mirror the ones above, but they also go into very detailed description of HCV screening in HIV-infected persons. In addition to recommending HCV screening upon initial evaluation, these recommendations also call for routine monitoring of liver function tests to account for acute HCV infection. Finally, to account for the risk from sexual exposure in HIV-infected MSM, they suggest HCV testing at either routine intervals or when a patient presents with an ulcerative STD (14).

Much like the STD guidelines, the CDC, NIH, and HIVMA “Guidelines for the Prevention and Treatment of Opportunistic Infections in HIV-Infected Adults and Adolescents” recommend that all HIV-infected patients should receive an HCV antibody test upon entry into care. Additionally, for individuals who are not infected with HCV, these guidelines recommend either annual testing or testing based on risk exposures on an ongoing basis (15).

In their recent updated recommendations for screening for HCV in persons at risk for infection, the USPSTF listed the following risk factors:

- Current injection drug use,
- Past injection drug use,
- Receiving a blood transfusion before 1992,
- Long-term hemodialysis,
- Being born to an HCV-infected mother,
- Incarceration,
- Intranasal drug use,
- Receiving an unregulated tattoo, and
- Other percutaneous exposures.
It is worth noting that this marks a change from their 2004 recommendations in which the USPSTF failed to recommend the screening of asymptomatic adults, including those who were engaged in risk factors related to infection. These updated recommendations acknowledge that current or past injection drug use is the single greatest risk factor for HCV, and that screening this population (and all others in their listed risk groups) would receive “moderate benefit” from screening (16) (Moyer 2013). It is also worth noting that neither the CDC risk-based HCV screening nor the USPSTF recommendations include any sexual risk in their recommendations, including among HIV-infected MSM.

In addition to giving risk-based screening recommendations a grade of “B”, the USPSTF also gave a “B” grade to the recommendation that all adults born between 1945 and 1965 be screened for HCV (in line with the CDC). The USPSTF noted that individuals from this population may have “a history of other risk factors for exposure decades earlier” (16). They acknowledge that a risk-based approach in this cohort might miss significant numbers of people due to lack of patient disclosure because of stigma surrounding the risk behaviors or a lack of awareness or recollection of past risks.

Although all risks and all modes of transmission are equally important and demand attention to minimize their occurrence, for the purposes of the Think Tank, we limited our discussion to the following populations:

1. People who currently inject drugs;
2. People who formerly injected drugs;
3. People who use non-injection drugs (current/former, with primary emphasis on intranasal drug use, and crack cocaine and methamphetamine smoking);
4. People who are incarcerated or have a history of incarceration; and
5. People at sexual risk (especially HIV-infected MSM).

None of these groups are distinct, and there is significant crossover among them. For example, a current PWID may come into contact with the criminal justice system and spend time in jail or prison, or an individual may be an HIV-infected MSM who smokes methamphetamine and engages in condomless sex. Thus, there are many opportunities to explore common health care settings through which people may pass, and where the provision of HCV screening strongly impacts status awareness. Additionally, unlike certain risk factors, such as being born to an HCV-infected mother or
receiving a blood transfusion before 1992, these five risk-based populations are linked by stigmatized behaviors, creating significant barriers of trust from patients and negative judgments from providers (17).

Within each of these risk groups, demographics such as race, age, and gender lead to different opportunities, enablers, and barriers. For example, an African American man who uses drugs is likely to have a very different structural experience than that of a suburban Caucasian youth injecting drugs. Both are at risk for HCV, but structural factors like racism, policing patterns, and health insurance coverage dramatically impact health outcomes, including access to HCV screening. In addition to demographics, as we discussed screening opportunities, it was also important to think about geography and the different points of access to HCV screening, prevention services, and healthcare. Urban areas are more likely to have sites for testing than rural communities. Access to HCV prevention tools like clean syringes and injecting equipment at syringe access programs or non-prescription pharmacy sales of syringes are different from community to community. Although we did not distinguish among the risk groups to this level of detail in our meeting agenda, these issues did come up and were discussed throughout in an effort to ensure that we maximized our reach in addressing the screening needs of all those at risk for HCV infection. Throughout the Think Tank, participants were asked to keep these considerations in mind as we explored scaling-up HCV screening.
Opening Statements and State of the Union

The Think Tank opened with welcoming remarks by Dana Van Gorder, Project Inform’s Executive Director. He set the stage by providing a snapshot of where we are in the HCV epidemic: New waves of HCV drug development are on the horizon, coinciding with implementation of the Affordable Care Act (ACA), and new opportunities for more people to be treated and cured of the disease. For all of the advancements and opportunities, however, the United States still has far to go to screen and diagnose the 50-75% of Americans infected with the virus who are unaware of their status. The CDC’s release of the birth cohort screening guidelines is one means of uncovering new infections, and the community mobilization to get the USPSTF to recommend these guidelines is inspiring. That said we cannot forget the screening needs and challenges for individuals at risk for HCV today. It is this issue that brings this group together: to discuss ways to improve risk-based HCV screening across a variety of settings.

Following the introductory remarks, the meeting facilitator Eileen Blumenthal provided an overview of the agenda and led group introductions in which participants were asked to state their primary hope for the Think Tank. A small sample of answers here sets the stage for the ethos of the meeting:

- Come up with good policy actions and reach out to Congress.
- Develop clear action steps and build new coalitions for advocacy.
- Hear some great examples that can help influence state and local government policies.
- Develop new questions where research can play a role in HCV screening practice and policy.
- Focus on incarcerated populations and discuss bringing them into the ACA.
- Try to expand our ideas of what risk means and think beyond the common populations and communities.
Throughout these introductions, the theme of collaboration and working together on common goals to affect HCV awareness, screening, linkage to care, and treatment was front and center and carried throughout the meeting.

Andrew Reynolds, Hepatitis C Education Manager at Project Inform, introduced the next section, “The State of the Union: An Overview of Hepatitis C Screening in the United States.” In this section, four experts were called upon to present on the current state of HCV overall and screening in particular from four different perspectives: surveillance and epidemiology, community, provider/health system, and patient care. Each presentation was designed to give participants a sense of where HCV is the United States and to introduce important issues related to screening.

**PRESENTATION:**

**Surveillance, Epidemiology and CDC Testing Recommendations**

_Bryce Smith, PhD, Division of Viral Hepatitis, CDC_

In an effort to set the stage for the Think Tank, Dr. Bryce Smith, Lead Health Scientist at the CDC Division of Viral Hepatitis, presented on HCV incidence and prevalence, and provided an overall picture of HCV epidemiology in the United States.

**KEY POINTS:**

- HCV burden of disease is high, particularly among high-risk groups.
- Injection drug use accounts for 60-70% of new infections in United States.
- After several years of decreased HCV incidence, there have been increases since 2010.
- State health departments in Massachusetts and New York have noted several HCV outbreaks among young PWIDs (under 30 years of age), primarily in suburban areas.
- Risk-based testing alone has had limited success at identifying HCV-infected persons.
- We must have comprehensive primary and secondary prevention strategies.
- New and innovative methods of identifying persons who are infected with HCV, but unaware of their infection, are needed.
- In order for the United States to maximize the potential health gains that new HCV therapies promise, screening and linkage to care must improve.
Donald Davis presented the screening barriers faced by people at risk for HCV. Donald’s career as a patient advocate and health educator brought him into contact with thousands of people living with HCV. Additionally, Donald has gone through HCV treatment twice. He has spoken openly about his experience in both print and electronic media, and brought the voice of the patient to the Think Tank.

**KEY POINTS:**
- Stigma, both real and perceived, plays a major role in barriers to screening.
- Past examples of health education messaging around HCV have not been effective.
- It is challenging to create health education materials that are accessible to people of varying degrees of literacy due to the complexity of HCV and HCV testing.
- The multi-step testing process (HCV antibody test, followed by a confirmatory RNA test) is a barrier for follow-up, especially when combined with misinformation about the testing process and the meaning of the results.
- Clear, easy-to-understand information about the screening process, from antibody testing to confirmatory viral load testing is important.
- The social memory of interferon-based treatment and its harsh side effects among PWIDs and others is a significant barrier.
- Positive health messaging, rather than fear-based messaging, is most effective.
PRESENTATION:

**HCV: The Community-Based Organization Perspective**

*Elier Reyes, Hepatitis C Health Navigator, RI Defeats Hep C*

Many organizations are doing excellent work to screen people at risk for HCV and offer examples for scaling-up risk-based screening. Elier Reyes, the Hepatitis C Virus Navigator of Rhode Island Defeats Hep C, presented a large-scale program of HCV awareness and screening to serve as a potential model for other systems of care to emulate.

**KEY POINTS:**

- The Rhode Island Defeats Hep C initiative includes an interdisciplinary group of clinicians, psychologists/therapists, and prevention outreach workers to increase awareness and capacity for screening, linkage to care, and treatment.
- It is a three-year project, funded by the Rhode Island Foundation;
- There are 5 step/goals of the project
- Step 1: Increase awareness through poster campaigns and events.
- Step 2: Expand testing, including community-based rapid testing in a number of locations and planned free confirmatory HCV RNA testing.
- Step 3: Link people with HCV to care.
- Step 4: Build infrastructure and expand capacity so more medical providers can offer treatment in areas with a high prevalence (e.g., corrections settings, methadone clinics, syringe access programs).
- Step 5: Evaluate the program.
- One key to a successful risk-based screening and treatment program is to not exclude drug users based on current alcohol or drug use from either HCV screening or treatment.
- Evaluation and treatment of co-existing issues such as drug dependence or psychiatric illness are key components for entry to and long-term engagement in HCV care and treatment.
PRESENTATION:
Screening High-Risk People for Hepatitis C; State of the Union
Brian Edlin, MD, National Development and Research Institutes, Weill Cornell Medical College

Dr. Brian Edlin closed out the presentations in this section with an overview of risk-based screening from a provider and clinical system’s level perspective. As a Senior Principal Investigator at the National Development and Associate Professor of Public Health and Medicine at Weill Cornell Medical College, Dr. Edlin brings over 25 years of experience on the needs of PWIDs and other at risk groups, and has been a strong voice in calling for the medical community to better serve these populations with HCV screening and treatment.

KEY POINTS:
- PWID are alienated from mainstream institutions. But although some have labeled them “hard to reach,” they are not hard to reach. Syringe exchange programs reach them, methadone maintenance programs reach them, (and researchers reach them) without difficulty. We know the tools: outreach, education, counseling, testing, and linkage to care. Respect, nonjudgment, and cultural competence. PWIDs are engaged in services, and it is imperative for service providers to offer HCV screening services when they do.
- Not all PWID are engaged in services, however. Five million young people used prescription opioids for nonmedical purposes last year. These young people are at high risk for hepatitis C, because transition to heroin is common, but they are not engaged in services. Nor will our existing surveillance systems reach these people. The only way to reach them is through targeted outreach. The same outreach programs can provide surveillance data, prevention services, and linkage to care. We know how to do this. We just need to do it.
- Incarceration provides an unparalleled opportunity to provide HCV prevention and treatment services to high-risk populations. Collaboration is needed between public health and corrections departments.
- Integrating HCV screening into HIV testing services would be an efficient way to be sure everyone who gets an HIV test also gets an HCV test;
- New technologies such as rapid testing or innovative screening strategies such as HCV RNA testing could be useful tools in improved risk-based screening;
• Screening must be accompanied by linkage to care;
• HCV care and treatment must move beyond just liver specialists, and include primary care providers and substance use treatment providers, with an integrated, multidisciplinary approach to care;
• Collaboration and training between HCV experts and PCPs will be essential as newer drugs make treatment easier to manage, but where skilled expertise opportunities for consultation will remain important;
• For all of this to occur, we will need strong leadership, advocacy and activism, with increased access to resources and support from CDC, SAMHSA, state and local health departments. We can act now, or we can sit back and watch the fire spread.

The Patient Journey:
Sites and Locations for HCV Screening

During the next section of day one, we considered the various points of entry for HCV awareness, screening, and linkage to care. Participants broke into small groups to discuss the barriers and opportunities to provide HCV services to people who fall within each of the previously stated five risk categories. The groups oriented themselves to the many issues that are often faced by the populations under discussion by figuratively walking the paths of people within each risk category. This allowed groups to highlight opportunities for outreach, awareness, screening, case management, counseling, health education, and ultimately linkage to care.

In discussing settings for HCV awareness and screening, Merrill Singer’s theory of syndemics proves a useful construct for service provision planning. Singer defines a syndemic as a “set of synergistic or intertwined and mutually enhancing health and social problems” (18). For example, in a survey of young PWIDs, Bourgois highlights the physical, emotional and sexual violence experienced by female PWIDs, which shapes risk for HCV (19), Syndemics can also be biological. For example, the presence of HIV with HCV can speed up liver disease progression and lead to increased morbidity and mortality.

Among the risk-based populations under consideration, HCV is part of a large syndemic that includes, but is not limited to, HIV, drug overdose, soft tissue infections
and other drug-related medical complications, alcoholism, drug dependence/addiction, sexual risks, IPV, homelessness, poverty, homophobia, racism, sexism, criminalization and criminal justice systems, among others. If we take the perspective that people at risk for HCV infection are afflicted by multiple interacting epidemics, we could expand and integrate HCV screening in a variety of locations that a person at risk for infection might visit. STD clinics, mental health programs, drug treatment programs, homeless shelters, jails, and prisons are all examples of settings that offer opportunities to screen people at risk for HCV.

As we examine settings for HCV services, one potential opportunity for addressing syndemics and integrating services comes from a CDC model of service delivery called “Program Collaboration and Service Integration”. Program Collaboration and Service Integration is an organizing principle that seeks to “promote the organizing and blending of separate activities and services for interrelated health issues using new and established linkages, to maximize public health impact and facilitate service delivery” (20).

The following chart provides a list of selected settings in which people at risk for HCV infection can be found. As we discussed patients’ journeys through the health care system, we considered the enablers and barriers that exist for HCV awareness and screening in each setting.

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<thead>
<tr>
<th>Community Health Clinics</th>
<th>School-Based Clinics</th>
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<tr>
<td>Syringe Access Programs</td>
<td>Mental Health Clinics</td>
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<tr>
<td>Primary Care Providers</td>
<td>STD Clinics</td>
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<tr>
<td>Outreach Workers</td>
<td>Supported Living Programs</td>
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<tr>
<td>Veterans Health Affairs</td>
<td>HIV Care Clinics</td>
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<tr>
<td>Homeless Shelters</td>
<td>Intimate Partner Violence Agencies</td>
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<tr>
<td>Mobile Health Clinics</td>
<td>Emergency Departments</td>
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<tr>
<td>Jails and Prisons</td>
<td>Community Based Organizations</td>
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</table>

In addition to scaling up HCV screening in these settings and finding new avenues for collaboration (both in funding and service delivery), United States public health officials and community advocates should consider new and innovative ways — to paraphrase the harm reduction approach to service delivery — to “meet people where they are” and offer HCV awareness services and screening. Culturally competent outreach and awareness campaigns are needed. An expansion of syringe access programs, with health workers and low-threshold access to HCV screening, is needed. To further
our impact on HCV awareness, prevention, and screening, we should explore innovative ways to reach both injecting and non-injecting substance users through evidence-based interventions like crack pipe distribution and safer injection facilities. Delivery of services such as these, in conjunction with HCV awareness and screening, could create new opportunities to reach populations typically underserved by traditional services.

Think Tank participants broke off into 5 different groups, with each one covering a particular risk group.

**GROUP 1: PEOPLE WHO INJECT DRUGS**

Hepatitis C is endemic in PWIDs. Injection drug use is the primary means of new infections in the United States, accounting for at least 16,000 new infections per year (and likely many more), with a prevalence rate of up to 42% per year (8). Of those chronically infected with HCV, nearly 56% have a history of injection drug use (21). HCV is efficiently transmitted not only through the sharing of syringes, but also through the sharing of injecting equipment like cookers, cotton, and water (11).

When considering the screening needs for PWIDs, it is important to identify both the structural and individual barriers to HCV testing. On a structural level, there are a number of places where current PWIDs go that do not universally provide do HCV screening, including but not limited to: syringe access programs, drug treatment programs (including methadone/buprenorphine clinics), pharmacies, and primary care settings. Even if we were to scale up HCV screening in these settings, we would still need to be mindful of gaps in screening coverage. As an example, syringe access programs are not readily available to all PWIDs, especially in rural and suburban areas. The federal ban on funding syringe access programs hampers HCV prevention efforts and may serve as a driver of new HCV infections among PWIDs.

In addition to structural barriers, individual barriers limit the reach of screening. These have been described in the scientific literature. Select examples include:

- The immediate needs of addiction overriding people's ability to address health needs;
- Fear of HCV and its treatments;
- Assumption that HCV is inevitable; and
- Stigma (though stigma is better viewed as a structural impediment imposed on PWIDs).
We also need to address structural factors that can improve medical providers’ ability to provide non-judgmental and culturally competent care, and raise the awareness and importance of HCV among those at risk for this infection. Further, we must address the provider-patient relationship, and perform the dual task of reducing the stigma of drug use among medical providers, while increasing PWID’s trust in the medical system (17).

Potential sites for reaching people who inject drugs, includes:

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<thead>
<tr>
<th>Syringe exchange programs</th>
<th>Methadone/buprenorphine programs</th>
<th>Primary care sites</th>
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<tbody>
<tr>
<td>Emergency departments</td>
<td>Homeless drop-in centers</td>
<td>Outreach testing</td>
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<tr>
<td>Residential and day drug</td>
<td>Community health centers</td>
<td>Mobile health clinics</td>
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<td>treatment programs</td>
<td>Homeless shelters</td>
<td>Pharmacies</td>
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<td>Jails/prisons</td>
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GROUP 2: PEOPLE WHO FORMERLY INJECTED DRUGS

As stated above, injection drug use is the most commonly associated risk factor for HCV. This is true of both active and former PWIDs. As a result of limited awareness of HCV (including recent discoveries of viral potency in injecting equipment), many people who have injected drugs in the past, even as infrequently as once in their lifetime, are at risk for infection. Also, as previously stated, it is estimated that approximately 56% of people infected with HCV have a history of injecting drugs (21). Depending upon the time frame of substance use and the timing of last use, people who formerly injected drugs, they may have less access to HCV screening than do people who currently inject as there are fewer services available post-treatment, limited access to healthcare and stigma/fear of disclosing past substance use to current medical providers.

Addressing risk based on prior injection history is challenging. The birth cohort guidelines are an innovative way of overcoming this barrier: simply offer the test based on the year of birth without asking about risk, which removes the need for a risk assessment. This is an important innovation as former substance users report high levels of stigma regarding their past use, even when it ceased years ago (22). This removes the need for disclosure of potentially stigmatizing past behavior and opens up the potential for successful testing opportunities.
Providing HCV services in drug treatment programs, including methadone maintenance and buprenorphine (suboxone) programs, is an important strategy to screen substance users (23). Providing accurate, non-judgmental health information about relapse prevention, as well as the risk for re-infection, is also important (17).

Potential sites for reaching people who formerly injected drugs include:

<table>
<thead>
<tr>
<th>Community Health Clinics</th>
<th>Jails and Prisons</th>
<th>Supported Living Programs</th>
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</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>Drug Treatment Programs</td>
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</tr>
</tbody>
</table>

GROUP 3: PEOPLE WHO USE NON-INJECTION DRUGS

The USPSTF has identified intranasal drug use as a risk factor that justifies screening for HCV. The Think Tank also considered and included the smoking and sharing of pipes to use heroin, crack cocaine, and methamphetamine as a potential risk factor that warrants HCV screening. Although the data is limited and these modes of transmission may not have the same level of consensus as injection drug use does, studies have shown higher rates of HCV in non-injecting drug users than in the general population (24). Additionally, research shows that certain populations of non-injecting drug users may be at increased risk of sexual transmission due to high-risk sexual behaviors and multiple partners (12, 13).

People who use non-injection drugs face similar barriers to accessing screening and services as do those who inject. Significantly, the stigma of drug use and fear of disclosing it are significant barriers in the provider-patient relationship. Individuals who identify as non-injection drug users may in fact inject but not be willing to disclose this, so that they are not afforded the same HCV prevention and screening opportunities that might otherwise be available. Finally, low levels of awareness of HCV risk from sharing snorting or smoking equipment may be a factor in ongoing transmission.
Accessing non-injection drug users for services can be more challenging than accessing PWID, as they tend to be more hidden (24). That said, screening for all substance use in a non-judgmental manner is important, as is HCV screening in drug treatment programs and other venues where this population might seek services. Outreach and education in settings where non-injection drug users congregate, such as nightclubs and organized parties, may also present opportunities for HCV awareness and screening activities.

Within this group, we discussed both people who are currently using non-injecting drugs and those who did so in the past.

Potential sites for reaching people who use non-injection drugs include:

GROUP 4: PEOPLE WHO ARE INCARCERATED OR HAVE A HISTORY OF INCARCERATION

The HCV prevalence rates range from 16–41% in incarcerated populations (jails and prisons) and are much higher than they are in the general population (25). It has been estimated that up to 43% of HCV-infected persons pass through the criminal justice system each year — some for a day in jail, others for a year or more in state or federal prison. This makes jails and prisons ideal settings for routine HCV screening (26).

Many of these individuals have multiple risk factors for HCV (e.g., HIV infection, injection drug use, IPV), and they would benefit from HCV testing and other services offered through an integrated model of care. Ideally, we should strive to provide these services before people are incarcerated and prevent jail or prison time. However, in
the absence of a sweeping change to our criminal justice system, the placement of HCV testing and other health services in correctional settings must become more widely available.

Although corrections facilities are ideal settings to find people with HCV, there are significant constraints on staffing and coordination of HCV screening, health education, care, and treatment, as well as severely limited fiscal resources. Jails and prisons are — first and foremost — sites for custody and control. The provision of medical care and social services is not their primary function. Finally, inmates are often highly mistrustful of jail and prison health services, making patient uptake of HCV services challenging to achieve. Despite these issues, jails and prisons could serve as important sites for HCV screening, taking into account the varying settings, populations, and lengths of stay within each.

Potential sites for reaching people who are incarcerated or who have a history of incarceration include:

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**GROUP 5: PEOPLE WHO ARE AT RISK OF SEXUALLY TRANSMITTED HCV INFECTION**

Sexual transmission of HCV is not universally accepted as a routine risk factor, although there is consensus on the risk posed to HIV-infected persons, especially MSM (27). Indeed, of the five risk groups we discussed at the Think Tank, sexual transmission of HCV is the only one not on the list of risk factors from either the CDC or USPSTF (though it is in separate CDC and other recommendations).
In HIV-negative individuals who do not inject drugs, sexual transmission of HCV is rare, even in HCV serodiscordant couples (28). This is true of both males and females regardless of sexual orientation. Multiple sex partners and the presence of a co-occurring STD have been shown to increase HCV risk (27). Due to the comparatively low rate of sexual transmission of HCV in heterosexual individuals and HIV-negatives ones, and due to limited time constraints, for the purposes of this Think Tank, we did not discuss HIV-negative individuals.

HIV infection appears to be the syndemic factor that increases HCV risk via sexual exposure. This is particularly true for MSM, but studies have shown that HIV-infected women are at increased risk of acquiring HCV. Additional sexual risk factors for people living with HIV include multiple partners, anal fisting, use of sex toys, and genital ulcerative STDs (including anal warts) (13). HCV screening and education should be provided in all settings where people with these risk factors may receive health services, including but not limited to STD clinics, HIV testing sites, HIV care programs, and primary care settings.

Finally, it is important to address both sexual assault and intimate partner violence (IPV) as two risk factors that may be possible routes of transmission, or at the very least issues that have a syndemic relationship with HCV (28). STD clinics, emergency departments and primary medical care clinics are locations where survivors of sexual trauma may present for care and services, and as such should be screened for IPV as a part of their assessment. Where IPV or sexual assault have been identified, screening for HCV risk and offering of a referral (if not the actual HCV test) should be made at sites and locations where IPV services are offered.
The HCV Landscape: Thoughts on the Future

In this portion of the day, we asked two participants to act as “futurists” and give us a sense of what both the access to healthcare and HCV treatment landscape might look like in the next 3-5 years, and how that may (or may not) impact access to HCV screening.

PRESENTATION:

HCV Prevention, Testing and Access to Care in a Post-ACA World

Malinda Ellwood, JD, Center for Health Law & Policy Innovation, Harvard Law School

Malinda Ellwood, JD, a Clinical Fellow at the Health Law and Policy Clinic of the Center for Health Law and Policy Innovation at Harvard University described the opportunities and challenges that we will face in the reformed health care delivery system since passage of the ACA.

KEY POINTS:

- The “HCV Treatment Cascade” clearly shows the need to increase awareness, linkage to care, and treatment;
- People living with HCV and PWIDs are more likely to be uninsured than the general population;
- ACA ends discriminatory insurance practices like exclusion due to pre-existing conditions or issuing annual or lifetime limits on benefits;
- ACA offers subsidies for low-income people [people with incomes between 100-400% of the federal poverty level (FPL)] to buy health insurance on the private market and offers states the option to expand Medicaid to individuals with incomes below 133% FPL
- Under ACA, there is no cost-sharing for screening that has a grade of “A” or “B” by the USPSTF (including both risk-based and baby-boomer screening for HCV);
- Potential for third-party reimbursement for both HCV prevention and testing services may lead to more community based organizations and clinics offering these services;
- As more people get insured, individuals may be more likely to get tested; 

continued ...
• ACA will lead to expanded access to substance use and other behavioral health services, which will lead to new opportunities for HCV screening interventions;
• The Massachusetts experience with healthcare can serve as a model for other states (including problem-solving around the challenges they are facing);
• A potential challenge outreach to and enrollment of populations that have been traditionally shut-out of the health system;
• There are many states that have chosen not to expand their Medicaid programs, which will continue to leave many of the most vulnerable populations (i.e., those who are the most low-income) affected by HCV without access to health services, including both testing and treatment. Advocacy for Medicaid expansion in these states is critical;
• High co-pays for HCV treatment medications are likely to continue to pose significant barriers for individuals with private insurance;
• As new models of integrated healthcare delivery are developed to address chronic illness, advocates will need to make sure that HCV is given the attention it deserves, as it may not be the primary focus of these new healthcare systems changes; models which focus on integrated behavioral and primary health care for instance, present key opportunities for HCV testing and treatment;
• Developing HCV healthcare quality metrics for HCV testing and treatment are a potential tool to improve care in these systems;
• Beyond the ACA, we must remain mindful of other needs that low-income people with HCV may have including, but not limited to housing, food, and transportation.

PRESENTATION:

The Future of HCV Treatment: Impact on HCV Screening
Brad Hare, MD, Associate Professor of Medicine, UCSF

Brad Hare, MD, Associate Professor of Clinical Medicine and Medical Director at the UCSF HIV/AIDS Division at San Francisco General Hospital, delivered a presentation on the impact that new HCV therapies might create, and highlighted potential screening needs, to assess for re-infection in particular, in this new era of DAAs. Changes in the management and treatment of HCV, as well as changes in the
healthcare system will bring about new opportunities and challenges for HCV screening. It is important to address these issues proactively, with research and community input informing the conversation so that those who make funding and policy decisions do so with the most complete information available.

**KEY POINTS:**
- Changes in the management and treatment of HCV, as well as changes in the U.S. healthcare system will bring about new opportunities and challenges for HCV screening;
- Models for HCV care and treatment among non-liver specialists exist and have proven successful;
- All-oral, interferon-free HCV regimens will be better tolerated and easier to take, removing a significant barrier for treating PWIDs and others living with HCV;
- Simpler treatment regimens with higher cure rates may motivate more providers to screen and treat, including primary care providers;
- As more people are cured, screening for reinfection will be an important component of follow-up HCV care, particularly among PWID, people in jail/prison, and HIV-infected MSM who are at risk for sexual transmission;
- Routine screening for HCV should be standard of care for people with HIV;
- Re-screening for HCV should be standard of care for people who have either cleared the virus spontaneously or through medical treatment that provided cure.
Day Two: Pitch Activity and Recommendations

The second day of the Think Tank was a half-day, with two priorities: Brainstorming new and innovative ideas to increase access to HCV screening for the risk-based populations under discussion, and to develop a list of recommendations to put some of these ideas into action. Following a review of the previous day, the Think Tank launched into the first activity.

PROBLEM-SOLVING THROUGH CREATIVITY

At the end of day one, Think Tank participants were asked to consider the challenges and opportunities identified regarding risk-based HCV screening, and come up with creative solutions. To do this, participants had 1-2 minutes to offer a “pitch”, an idea for increasing access to HCV screening in the risk populations under consideration. Think Tank participants then broke into small groups on a select number of ideas, and addressed the following questions:

• What is the issue you are looking to address?
• What's the idea you are pitching?
• What are you hoping to accomplish with this idea?

In all, there were 35 ideas pitched, with a selection described in detail below:

I. INCREASED HCV SCREENING EFFICIENCY

THE ISSUE:
The two-step process for HCV screening—antibody followed by confirmatory RNA—can be a barrier for both patient and provider. A simplified, one-step screening/confirmation process would improve screening efficiency, reduce cost, and lead to quicker linkage to care. HCV antigen testing is one means of achieving this one-step process, and has been successfully applied in different laboratory settings to detect early HCV infection.
THE PITCH:
Develop a workgroup to monitor, promote, and advocate for improved screening methodologies.

RELATED IDEAS:
• Skip HCV antibody screening in high-prevalence populations and focusing on RNA testing
• Use RNA testing to detect acute HCV infection in high prevalence populations
• Explore the development and use of a rapid RNA test in field testing settings
• Develop patient-related materials explaining HCV testing process and meaning of results

II. HCV RE-INFECTION AWARENESS: “STAY CURED”

THE ISSUE:
As HCV treatments become more effective and easier to take with fewer side effects, and the ACA creates more insurance coverage, there will be more opportunities and incentives to treat people living with HCV. We will have more people living post-cure. Some of these individuals, including HIV-infected persons practicing condomless sex and those who are actively using drugs, are at risk of re-infection.

THE PITCH:
Develop a workgroup that will work with various partners to create a comprehensive approach to post-cure services and care. This approach will include the following components:

• Improve data collection and reporting;
• Develop re-infection screening guidelines;
• Develop a provider tool-kit;
• Disseminate a tool-kit and other information
• Establish quality metrics
• Incentivize implementation

RELATED IDEAS:
• Develop important post-cure educational materials (e.g., hepatocellular carcinoma screening, living with cirrhosis, re-infection risks)
• Raise awareness of sexual transmission of HCV in HIV-infected persons
III. IMPROVE HCV SCREENING IN JAILS AND PRISONS

THE ISSUE:
There is a need to increase HCV screening and treatment for incarcerated populations. Improved screening, followed by better access to treatment, particularly the newer, shorter therapies, will have positive impacts on both prison and public health. The treatment standards in jails and prisons should match community treatment norms.

THE PITCH:
Develop a workgroup that will work with engage partners to standardize opt-out HCV screening at intake into jails and prisons. For individuals who test positive (or are known positive upon entry to jail/prison), referral and linkage to medical care and educational support will be provided. This group will also work to develop awareness and educational materials/campaigns for incarcerated populations. Additionally, this group will work to standardize opt-out screening upon discharge, and pair it with release planning and linkage to care, including assistance with access to health insurance benefits where applicable.

RELATED IDEAS:
- Increase access to health insurance for incarcerated populations, such as enrolling individuals in Medicaid or private insurance prior to release; and/or billing private insurance plans for health services provided to inmates who are incarcerated pending disposition
- Create transition clinics for immediate linkage to care post-release

IV. HCV SERVICE INTEGRATION INTO METHADONE MAINTENANCE PROGRAMS AND SYRINGE EXCHANGE PROGRAMS.

THE ISSUE:
Both methadone programs and syringe access programs are settings serving populations with high HCV prevalence. There is a wide variation of HCV services in these settings, ranging from none at all to fully integrated screening and care programs. Model programs exist, but there remains a need to expand and promote these programs. Additionally, there are opportunities to increase services.
THE PITCH:
Promote/highlight successful models of HCV service provision at methadone programs and syringe access programs. In addition, develop a toolkit or list of best practices for the integration of HCV screening, linkage to care, and treatment (where applicable) for these programs, and provide consultation to organizations that are looking to implement said practices.

RELATED IDEAS:
• Increase knowledge of HCV and drug user health among health care navigators;
• Ensure that all methadone and buprenorphine prescribers receive training on HCV screening and care, and offer an HCV test to at-risk participants/patients at least annually

V. IMPROVE DRUG USER HEALTH

THE ISSUE:
PWIDs and other drug users face the brunt of the morbidity and mortality of HCV infections, and they have a host of other health care needs. We have effective models for engaging these populations in medical care in a variety of community settings (e.g., syringe access programs, homeless outreach services, drug treatment programs).

THE PITCH:
Develop new medical treatment models, and promote already existing ones through learning collaboratives and/or technical assistance networks for CBOs looking to develop programs that serve people who use drugs. The goal is to establish a national network of experts who can provide capacity building assistance to programs looking to expand HCV screening and treatment.

RELATED IDEAS:
• Utilize mobile health centers for HCV screening and treatment;
• Develop an HCV Screening Toolkit
• Advocate to lift the ban on federal funding for syringe access programs

The meeting closed with a group discussion and brainstorming of potential recommendations to support increased risk-based HCV screening in the United States. As an organizing principle, Project Inform organized these Think Tank recommendations within the goals and strategies put forth in DHHS’s “Combating the Silent Epidemic of Viral Hepatitis: Action Plan for the Prevention, Care and Treatment of Viral Hepatitis” to show where and how these recommendations for increasing risk-based screening fit within larger national efforts.
GOAL 1.1

Build a United States health care workforce prepared to prevent and diagnose viral hepatitis and provide care and treatment to infected persons.

THINK TANK RECOMMENDATIONS:
1. Support medical providers, especially primary care providers, with educational offerings about HCV screening and the negative impact of stigma on people’s access to HCV prevention, testing, care, and treatment services.
2. Strengthen messaging to patients and providers to encourage testing, in part by increasing understanding of the benefits of testing in the current context of the epidemic.
3. Support the creation of an HCV equivalent to the HIV Medical Association (HIVMA) within the American Academy for the Study of Liver Diseases (AASLD) and the Infectious Diseases Society of America (IDSA).

GOAL 1.2

Decrease health disparities by educating communities about the benefits of viral hepatitis prevention, care and treatment.

THINK TANK RECOMMENDATIONS:
1. Support patients to understand the meaning of antibody and confirmatory RNA test results.
2. Increase awareness and screening of HIV-infected MSM at risk of sexual acquisition or transmission of HCV.
3. Increase awareness of new, non-interferon based HCV treatment options among at-risk populations (emphasizing reduced side effects and greater treatment success)
4. Increase awareness and screening for HCV reinfection in those who have cleared the virus and/or who have been successfully treated and cured.
GOAL 2.1

Identify persons infected with viral hepatitis early in the course of their disease.

THINK TANK RECOMMENDATIONS:
1. Ensure Medicare covers HCV screening for baby boomers and at-risk individuals through the national coverage determination process.
2. Explore testing algorithms that bypass antibody testing in high-risk populations in order to simplify and shorten the diagnostic process.

GOAL 2.2

Link and refer persons infected with viral hepatitis to care and treatment.

THINK TANK RECOMMENDATIONS:
1. Establish collaborations between people who work with substance users and those who treat HCV.
2. Develop peer education and support programs.

GOAL 2.3

Improve access to and quality of care and treatment for persons infected with viral hepatitis.

THINK TANK RECOMMENDATIONS:
1. Research and develop a mechanism to measure the implementation of grade A and B hepatitis C USPSTF recommendations.
2. Assure the inclusion of all HCV medications on drug formularies of all public and private health insurance plans and ensure access to those medications with minimal barriers, including advocacy for elimination and/or reduction of expensive cost-sharing requirements.
3. Urge all states to expand their Medicaid programs.
4. Assure maximum coverage of HCV care, treatment, prevention, and support services in the 2016 revision of the Essential Health Benefits Packages.
GOAL 3.1

Build a network of state and local surveillance systems with sufficient capacity to monitor viral hepatitis transmission and disease.

THINK TANK RECOMMENDATIONS:
1. Identify opportunities to increase viral hepatitis surveillance and leverage existing data sources, and use and analyze that data to inform policy and programs. Included within this recommendation is the request for adequate funding for these activities: there was a consensus that an unfunded mandate would not be productive.
2. Seek increased federal and state funding for HCV surveillance, testing, care, and treatment.
3. Seek to leverage HIV funding streams to support HCV surveillance, testing, care, and treatment.
4. Develop updated and accurate data on the various risk groups, including targeted outreach to high-risk groups not reached by the NHANES survey in order to gather robust surveillance information.

GOAL 5.1

Ensure that persons who inject drugs have access to viral hepatitis prevention, care, and treatment services.

THINK TANK RECOMMENDATIONS:
1. Seek opportunities to include HCV testing alongside HIV testing whenever possible.
2. Ensure the integration of HCV testing in programs that serve at-risk communities.

GOAL 5.4

Expand access to and delivery of hepatitis prevention, care, and treatment in correctional programs.

THINK TANK RECOMMENDATIONS:
1. Promote opt-out testing, care, and treatment of all inmates in all jails and prisons.
2. Improve linkage to care and post-release planning to all inmates in jails and prisons.
CONCLUSIONS

Project Inform will disseminate this report and host webinars to provide an opportunity for interested advocates to review the results of the Think Tank and become involved in implementing the recommendations. Project Inform will establish work groups on new initiatives and partner with advocacy colleagues on projects and initiatives already in place in order to implement the recommendations developed during the Think Tank.

Overcoming challenges related to HCV testing and linkage to care PWID, people who formerly injected drugs, people who use non-injection drugs, and people who are incarcerated or have a history of incarceration, and people at risk of sexual exposure is daunting. That said it is a very hopeful time for HCV advocacy to improve outcomes for people living with HCV.

We have several new tools at our disposal to address HCV. We have a National Viral Hepatitis Action Plan to guide our work. We have new CDC/USPSTF screening guidelines to inform our practice. We have new treatments and AASLD/IDSA treatment guidelines to cure many more people living with HCV. We have the ACA to improve access to care and treatment for our most vulnerable populations. Most importantly, we have dedicated people at all levels of government, a strong advocacy community, and people living with HCV to work toward ending the HCV epidemic.

This Think Tank made an important contribution to the critical and ongoing process of improving risk-based HCV screening. Project Inform recognizes the opportunity and the importance of engaging the community in this process moving forward. To that end, we welcome feedback, input and suggestions from others on best practices, and additional recommendations and ideas. Finally, we welcome ideas and participation in future webinars and workgroups intended to improve access to awareness, screening, and linkage to care for people at risk for and living with HCV. To provide feedback and/or participate in our ongoing efforts to address HCV, please contact Andrew Reynolds, the Hepatitis C Education Manager at Project Inform. He can be reached via email at areynolds@projectinform.org and via phone at 415-580-7308.

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Participants included thought leaders, advocates and experts in hepatitis C screening and policy raging across a variety of disciplines. Asterisks by the names denote participants who were also part of the Think Tank Planning Committee.

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