New York State Hepatitis C Elimination Plan

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NYS Hepatitis C Elimination Plan

INTRODUCTION

HCV infection is a major public health problem causing substantial morbidity and mortality, including cirrhosis and liver cancer. It is responsible for more deaths in the United States than all 60 reportable infectious diseases combined, including HIV and TB. Nationally, three out of four people living with HCV are persons born between 1945 and 1965. Most new infections occur because of injection drug use (IDU). In recent years, there has been an increase in HCV among young people who inject drugs living in rural areas of the country. This increase is tied to the opioid epidemic. Many people with HCV are unaware they are infected. The approval of direct acting antiviral therapies makes it possible to eliminate HCV. However, we know it will take more than highly effective treatments to eliminate HCV as a public health problem. Gaps along the HCV care cascade must be addressed to ensure: new cases of HCV are prevented; everyone with HCV knows their status; persons living with HCV receive treatment; and social determinants of health, including stigma and discrimination, are addressed. In addition, surveillance systems must be strengthened at the state and local levels.

Although there are highly effective treatments, many people with HCV are unable to access them because of lack of provider capacity or stigma and discrimination. With the opioid epidemic fueling the rise of new cases, HCV prevention efforts, such as harm reduction services and opioid substitution therapy, and innovative ways of reaching people who inject drugs (PWID) to ensure they receive HCV treatment are more important than ever. Key to the elimination of HCV will be ensuring timely access to HCV screening, diagnosis, and linkage to care and treatment. Structural inequities such as poverty, homelessness, lack of transportation, mental illness, and criminalization and stigmatization of substance use further exacerbate barriers to linkage and retention in care. Similarly, these barriers may also prevent people from accessing harm reduction and prevention services, placing them at increased risk for HCV infection and reinfection. Elimination efforts must address the social and structural barriers that prevent people from engaging and remaining in HCV care and prevention. Finally, surveillance infrastructure for HCV has lagged behind that of other infectious diseases like HIV making it difficult to accurately estimate how many people are living with current HCV infection (prevalence) and identify new (incident) infections.

In 2016, the World Health Organization (WHO) endorsed the elimination of hepatitis B and C by 2030. In 2017, The National Strategy for the Elimination of Hepatitis B and C: Phase Two Report recommends specific actions to hasten the end of these diseases and lays out five areas—information, interventions, service delivery, financing, and research—to consider in the national plan.

In March 2018, New York State (NYS) announced its commitment to eliminate hepatitis C virus (HCV) as a public health problem by increasing access to medication, expanding comprehensive

HCV programs, and enhancing HCV treatment services for those at risk. In April 2018, an allocation of $5 million was announced to implement new programs and activities that will lead the State toward elimination. In July 2018, NYS announced its strategy for hepatitis C elimination, including the establishment of a Hepatitis C Elimination Task Force. The NYS Hepatitis C Elimination Task Force is charged with providing input to the NYS Department of Health (DOH) on the hepatitis C elimination plan.

The purpose of the NYS HCV Elimination Plan is to provide recommendations that will lead NYS toward eliminating HCV as a public health problem. Implementation of the plan will require the work of many organizations and individuals, including state and local agencies, health care and community-based organizations, public and private partnerships, and persons impacted by HCV. The recommendations are intended to evolve with new research, care models, and policy advances. The elimination targets and metrics are ambitious. As we work to strengthen our surveillance system, the targets and metrics may be revised to reflect improved accuracy of the data.

HEPATITIS C EPIDEMIOLOGY IN NEW YORK STATE (NYS) AND NEW YORK CITY (NYC)

New York State (Excluding NYC)

Between 2001 and 2019, 151,539 chronic or acute HCV cases were reported in NYS, excluding NYC. There were 6,175 total HCV cases (5,911 chronic HCV cases, 253 acute HCV cases and 11 perinatal HCV cases) newly reported in 2019, with a case rate of 54.9 per 100,000. Newly reported cases declined 35% since 2014, when the number of reported cases was highest. While chronic hepatitis C may be due to infection acquired decades earlier, acute hepatitis C is likely to indicate recent infection. Forty-nine percent of the acute cases newly reported in 2019 were among persons under 40 years of age. Injection drug use (IDU) was the most commonly reported risk factor among all HCV cases (72% of cases with available risk factor information). IDU was especially common among younger HCV cases (87% of cases under 40 years of age with available risk factor information). It should be noted that the completeness of information on IDU varies by type of hepatitis C and age. In 2019, IDU history was unknown or missing for as little as 27% of acute cases and as much as 61% of cases ≥40 years of age.

In recent years, there has been a shift in the distribution of newly reported HCV cases by age. In 2008, among all HCV cases newly reported in ROS, the peak of cases (65%) was found in the 40-59 age group. In 2019, there were two peaks of newly reported cases. While older adults (ages 50-69) accounted for 30% of all reported cases, more cases (48%) were among persons aged 20-39.

There has also been a shift in the distribution of cases by sex. In 2008, females accounted for 33% of the newly reported cases. This proportion increased to 40% in 2018. In 2019, despite seeing a decline in the number of newly reported cases among persons who can become pregnant (15-44

years) for the first time in recent years, this age-group comprised 60% of female HCV cases, an increase from 33% in 2008.

New York City

In NYC, in 2019, there were 4,427 newly reported cases of chronic hepatitis C and a case rate of 54.9 per 100,000. Newly reported cases declined 51% since 2014. A decade ago, there was a unimodal age distribution, with most newly reported cases of chronic hepatitis C concentrated among the 1945-1965 birth cohort. In 2019, there was a bimodal distribution, with a distinct peak emerging among the younger age group (i.e., those born after 1964). However, in 2019, a higher proportion of newly reported cases continued to be seen in older ages (37% aged 50-69 vs. 33% aged 20-39). In NYC, females comprised 37.4% of all newly reported cases in 2019. Unlike the rest of NYS, in NYC new reports of cases among women of childbearing age have declined steadily since 2014. In 2019, 41% of all newly reported HCV cases in females were among persons who can become pregnant.

HEPATITIS C ELIMINATION WORK IN NYS – COMMUNITY LEADERSHIP

Figure 1 outlines the history of HCV elimination in NYS. The HCV elimination work in NYS was driven largely by the HCV community. In 2016, the community called a meeting with public health officials to discuss HCV elimination. As a result of those discussions, the community formed a Steering Committee comprised of health care providers, researchers, harm reduction and social service providers, representatives from state and local government, payers, and representatives from health care associations. This Steering Committee was charged with hosting the NYS Hepatitis C Elimination Summit.

The Steering Committee established five workgroups: 1) HCV prevention; 2) HCV care and treatment access; 3) HCV testing and linkage to care; 4) surveillance, data and metrics; and 5) social determinants. The workgroups developed over 30 recommendations for HCV elimination in NYS.

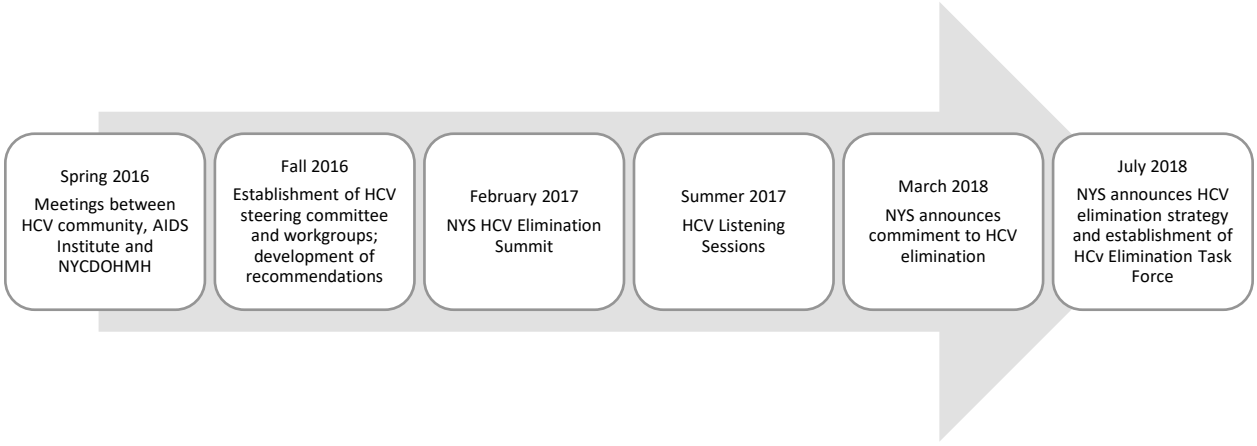
On February 7, 2017, the NYS Hepatitis C Elimination Summit was held. The Summit brought together State, local, federal, and national viral hepatitis partners, community partners, and people living with HCV. The Summit unveiled the recommendations developed by the five working groups and presented the Community Consensus Statement on Hepatitis C Elimination, which outlined the five pillars for HCV elimination in NYS and called for the establish of a hepatitis C elimination task force. Following the Summit, community stakeholders hosted 20

listening sessions across NYS and in NYC to gather input on the recommendations and Consensus Statement.

NYS Hepatitis C Elimination Community Consensus Statement

1. Enhance HCV prevention, testing and linkage to care services for PWID, people who are incarcerated, men who have sex with men (MSM), and other populations disproportionately impacted by HCV infection.
2. Expand HCV screening and testing to identify people living with HCV who are unaware of their status and link them to care.
3. Provide access to clinically appropriate medical care and affordable HCV treatment without restrictions and ensure the availability of necessary supportive services for all New Yorkers living with HCV infection.
4. Enhance NYS HCV surveillance, set and track HCV elimination targets, and make this information available to the public.
5. Commit NYS government and elected officials, public health professionals, HCV experts, and industry partners to leadership and ownership of the NYS Plan to Eliminate HCV alongside community members living with and affected by HCV.

Figure 1 - History of HCV Elimination in NYS



NYS HEPATITIS C ELIMINATION PLAN DEVELOPMENT (FIGURE 2)

NYS HCV Elimination Task Force

The Hepatitis C Elimination Task Force (TF) is an appointed group of 28 individuals (Appendix A) from diverse backgrounds and expertise such as HCV prevention, clinical care and treatment, research and public health policy. The TF also includes individuals with lived experience. The TF

was led by Governmental and Community Co-chairs. The TF was charged with providing input to the NYS Department of Health (DOH) on the hepatitis C elimination plan. This was accomplished by building on the recommendations developed by the Steering Committee and its five workgroups in 2017.

HCV Elimination Workgroups (WG)

The five workgroups from the Steering Committee were re-established to assist the TF in developing the elimination recommendations. WG members (Appendix B) share the same diverse backgrounds and expertise as the TF members. Persons of lived experience were members of each WG. Each WG was comprised of two co-chairs, an AIDS Institute liaison, and at least one TF member.

Each WG was tasked with reviewing the 2017 recommendations specific to their focus area to ensure that the recommendations were still appropriate and revising and updating them as necessary. WGs also identified emerging issues for inclusion in the recommendations.

NYS HCV Elimination Task Force Meetings

The kick-off meeting of NYS HCV Elimination Task Force was held on November 27, 2018 in Albany, NY. Over 100 individuals attended this meeting, including all TF and WG members. The meeting was live-streamed across the state. The meeting provided an overview of the NYS and NYC HCV surveillance data and the NYSDOH and NYCDOHMH HCV programs and policies. The charge of the TF and WGs was also presented, and time was allotted for each of the WGs to convene and begin the review of their recommendations. Between December 2018 and March 2019, WGs met via conference call to review, discuss and develop their recommendations. Once final, the recommendations were prioritized. On June 4, 2019, the TF, along with WG members, reconvened to review and discuss the WG recommendations and prioritization results. At the end of the meeting, the final draft recommendations were approved for sharing during community calls.

Prioritization of Workgroup Recommendations

To ensure objectivity and support the allocation of future resources, each WG prioritized their draft recommendations using an online tool administered by the AIDS Institute Office of Program Evaluation and Research. Since the number of recommendations varied by WG, the tool was customized for each workgroup to facilitate prioritization along five pre-defined criteria.

Prioritization Criteria

1. Magnitude of Impact: Likely to have a significant impact on HCV elimination.
2. Immediacy of Impact: Likely to have an immediate impact on HCV elimination.
3. Funding/Resources: Likely to be implemented with limited resources or with existing resources.
4. Sustainability: Likely to be maintained over time.
5. Ease of Implementation: Likely to be implemented with ease.

Prioritization was accomplished in four main steps. First, WG members and co-chairs evaluated the relative importance of the criteria, and their inputs were used to calculate the relative weights for the criteria. Next, each recommendation was assessed against all other recommendations, one at a time, along the five criteria. Third, individual scores were weighted and combined to derive the relative priority scores for the recommendations. Fourth, the relative priority scores were used to rank-order the recommendations within each workgroup.

Preliminary prioritization results were shared and discussed with WG and TF co-chairs. Prioritized recommendations were also edited based on feedback gathered from the June 4 Task Force meeting and the community calls.

Priority Populations and Settings

In addition to prioritizing each recommendation, workgroup members also identified priority populations that would most likely be impacted by implementation of the HCV elimination recommendations and priority settings that will lead to successful implementation of the elimination recommendations. The results from all workgroups were combined to determine the top 5 priority populations and settings.

Top 5 Priority Populations

- People who use drugs
- Currently or formerly involved in the justice system
- Baby boomers (born between 1945 and 1965)
- Homeless or at risk of becoming homeless
- HIV+ individuals (including HIV/HCV coinfection)

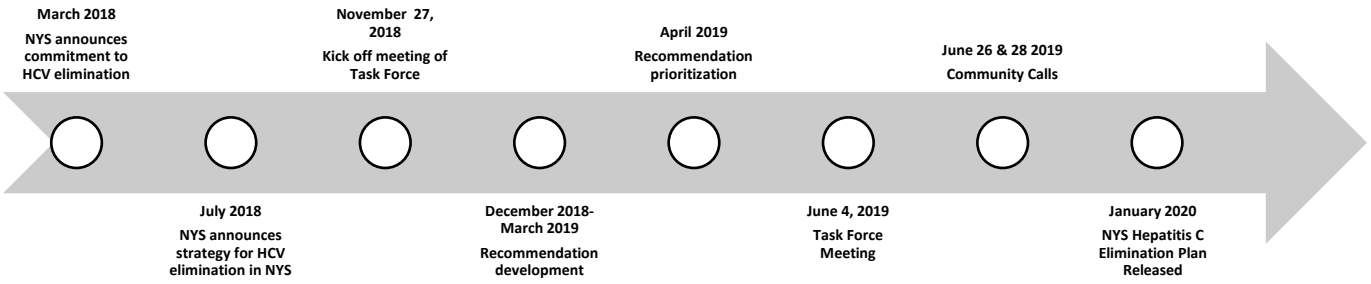
Top 5 Priority Settings

- Correctional facilities, including jails, courthouses, prisons
- Harm reduction programs
- Drug/substance use treatment program sites
- Primary and routine health care offices, community health providers, and federally qualified health centers
- Settings serving the homeless

Community Input

Development of the NYS HCV Elimination Plan was an inclusive and transparent process. Input from the larger HCV community is paramount to successful implementation of the plan and to reach the elimination targets. Two state-wide conference calls were held with community stakeholders to obtain community input. Calls allowed community members to review and comment on the elimination recommendations prior to finalizing the recommendations.

Figure 2 - Recommendation Development Timeline



GUIDING PRINCIPLES OF THE HCV ELIMINATION PLAN AND RECOMMENDATIONS

Four guiding principles will serve as a foundation for the successful implementation of the NYS HCV Elimination Plan. (Figure 3)

Figure 3 - Guiding Principles of the HCV Elimination Plan and Recommendations

Health Equity

Health equity means that everyone is valued and has a fair and just opportunity to be healthy. Pursuing health equity implies a commitment to eliminate avoidable, unjust, and unfair health inequities and health care disparities. It requires stigma-free, equitable service delivery and removal of obstacles to health such as poverty, discrimination, and their consequences, including powerlessness and lack of access to good jobs with fair pay, quality education and housing, safe environments, and health care. Health equity is achieved when no one is limited in achieving good health because of their social position or any other social determinant of health.

Harm Reduction

Harm reduction is a set of practical strategies that reduce the negative consequences of drug use and other risk behaviors (e.g., sexual risk). Harm Reduction is rooted in principles of health and dignity, participant autonomy, participant-centeredness, meaningful involvement, participant pragmatism, and a commitment to address discrimination, inequalities, and injustices. A harm reduction approach focuses on positive change and working with people without judgment, coercion, discrimination, or requiring that they stop using drugs as a precondition of support. Harm reduction applies evidence-based interventions (i.e., syringe access, overdose prevention) to reduce negative consequences of drug use (i.e., overdose fatalities, HIV and HCV transmission, injection-related wounds), modeling the stages of change theory. Harm reduction meets people "where they're at," but does not leave them there.

Trauma-Informed Approach

Trauma and adversity affect a person's physical and mental well-being and can influence how they respond to the environment, relationships, interventions, and treatment services. A trauma-informed approach acknowledges the prevalence of trauma; recognizes how trauma affects all individuals involved with the program and organization, including its own workforce; and responds by proactively resisting re-traumatization. Trauma-informed care applies a universal precautions approach based on five guiding values and principles -- Safety, Trustworthiness, Choice, Collaboration and Empowerment -- to avoid re-traumatization.

Meaningful Involvement of People with Lived Experience

Meaningful involvement of people living with HCV is beneficial at the societal, organizational and individual level. It acknowledges the universal rights of people living with HCV to self-determination and participation in decisions that affect their lives. It fosters buy-in with the communities served and ensures development of effective programs and policies that are grounded in and responsive to their lived realities. It is necessary to recognize the value of significant involvement, voice, and meaningful choice at all levels and in all areas of organizational functioning (e.g., program design, implementation, service delivery, quality assurance, cultural competence, access to harm reduction, peer support, workforce development, and evaluation). A foundation of commitment, support, and resources is needed to enable meaningful participation of people living with HCV.

NYS HEPATITIS C ELIMINATION TARGET AND METRICS

Prevalence of HCV infection in New York State

An important beginning step to designing and monitoring the success of an HCV elimination strategy is understanding the current burden of HCV infection in the population – the prevalence of current HCV infection in NYS. Earlier approaches developed by UAlbany School of Public Health (SPH) and the NYSDOH estimated the prevalence of HCV in all U.S. states, and specifically in NYS, for the years 2008 and 2015, using statistical models that integrate CDC national household survey data with HCV case surveillance and mortality data. To specifically inform NYS elimination planning, in consultation with the NYSDOH and NYCDOHMH, UAlbany SPH further refined the published 2015 NYS estimate using HCV diagnosis data from both NYS and NYC and incorporated state-specific HCV testing data among persons in jails and prisons. These adjustments resulted in the primary estimate of 114,400 (0.74%) adults infected with current HCV infection throughout NYS. Bocour et al. recently estimated the prevalence of HCV infection in NYC alone in 2015. To be scalable to all of NYS, this method requires data and assumptions that are currently unavailable. Nonetheless, using assumptions from earlier work, the UAlbany SPH approximated this technique for all of NYS, yielding HCV prevalence between 168,000 – 200,000 adults, forming an upper-bound for NYS prevalence and used in the simulation models described below.

Hepatitis C Elimination Targets

The World Health Organization has set the following goals to achieve HCV elimination worldwide by 2030. These goals were used to establish the HCV elimination targets in NYS.

- 90% reduction in people living with HCV
- 90% of people living with HCV will be diagnosed
- 80% of diagnosed HCV infections will be treated or will have cleared infection
- 65% reduction in liver related deaths
- 80% reduction in new HCV infections

The Center for Disease Analysis Foundation's Polaris Observatory constructed a dynamic simulation model of the HCV epidemic in NYS, in close consultation with the NYSDOH, the NYCDOHMH, and members of the NYS HCV Elimination Task Force's Surveillance, Data and Metrics Workgroup. The details of the model have been described previously and have been used by multiple countries and states. Briefly, a mathematical disease progression model was calibrated using state-specific epidemiologic data. New infections among PWID were described separately using a mathematical model of HCV transmission. The HCV disease progression and transmission models were combined to simulate the HCV epidemic in NYS through 2030. The model considered starting 2015 HCV prevalence of 116,000 persons (a lower-bound based on the above 114,000 adults with 1,600 children living with HCV) and 189,000 persons (an upper bound based on the 168,000 – 200,000 adults living with HCV, applying the alternative method). Table 1 presents projected cumulative HCV targets during the 2020-2030 period, resulting from aggressive public health measures undertaken as part of the HCV elimination initiative.

Table 1 – Cumulative HCV-related elimination targets in New York State, 2020 – 2030

Cumulative targets, 2020-2030					
Target	Screened (in millions)	Diagnosed	Treated	New (incident) infections - PWID	Liver-related deaths
Elimination Target	10.0-10.6	33,200-75,000	75,600-143,000	37,100-46,400	2,900-9,100

Hepatitis C Elimination Metrics

Primary metrics

In order to monitor progress toward elimination, defined as tracking a 90% reduction in people living with HCV, three quantities will be measured in NYS: 1) the number of persons newly diagnosed with HCV infection, per year, 2) the percent of persons diagnosed with HCV with

evidence of treatment for, or clearance of, hepatitis C infection, per year, and 3) the number and rate of new HCV infections among persons who inject drugs (PWID), per year. (Figure 4)

Using these three quantities, in conjunction with several other computations performed annually, NYS DOH and UAlbany SPH have developed a method to estimate, for each year, the current HCV prevalence for NYS, as well as cumulative measures of diagnosis, treatment/clearance, and new infections among PWID. Details of design and implementation remain to be finalized.

Figure 4 – Primary metrics for monitoring HCV elimination

HCV Diagnoses	HCV Treatment	New Infections among PWID
• Definition The number of persons newly diagnosed with HCV infection, per year. • Data Source HCV case reporting to NYS DOH and NYCDOHMH.	• Definition The number of persons diagnosed with HCV with evidence of treatment for, or clearance of, HCV infection, per year. • Data Sources Laboratory reporting of HCV RNA results to NYS DOH and NYCDOHMH, augmented by treatment information from other data sources.	• Definition The rate and number of new HCV infections among PWID, per year. • Data Source Targeted bio-behavioral study of PWID at syringe exchange programs (SEPs) across NYS.

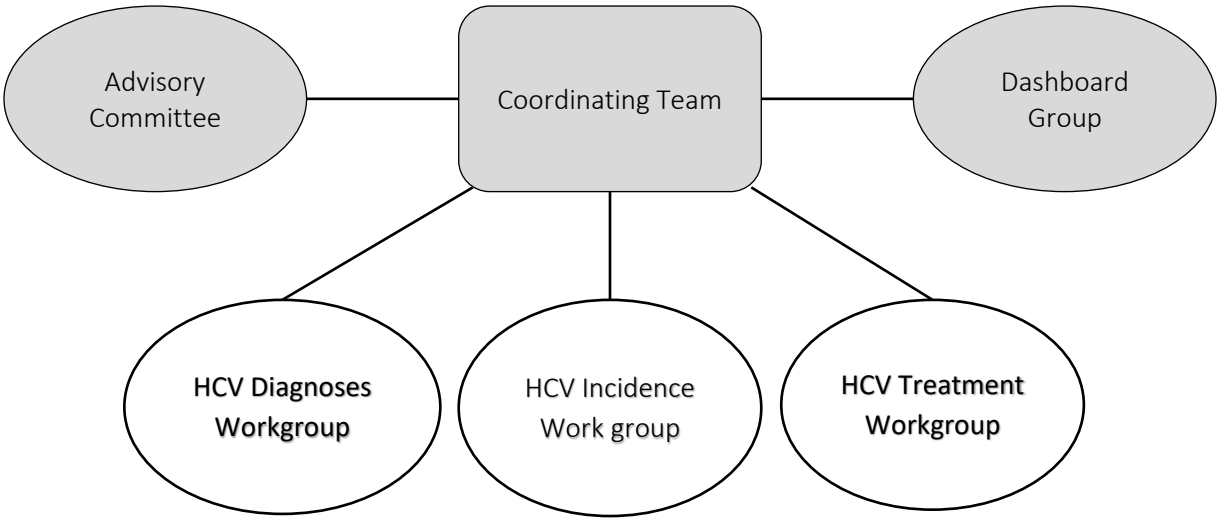
Secondary metrics

Secondary measures may be developed that address important clinical outcomes related to HCV infection (e.g., cirrhosis and hepatocellular carcinoma-related deaths, liver transplants) or focus on priority subpopulations (e.g., Medicaid population, PWID, rural populations) or demographic stratifications (e.g., sex, age, race). Important disparities in HCV risk and care exist by such subgroups. In addition, measures to track the implementation of TF recommendations will be developed.

Data and metrics monitoring system structure

The primary and secondary metrics will be monitored through a program comprised of six groups: a coordinating team, three working groups focused on each of the primary metrics, an advisory group, and an online dashboard group. (Figure 5)

Figure 5 - HCV elimination metrics monitoring system structure



Coordinating Team. A coordinating group led by UAlbany SPH, in close coordination with the NYSDOH AIDS Institute, will perform a number of activities to ensure the proper and valid functioning of the data and metrics monitoring process and will help to develop annual data summaries that describe progress toward elimination.

Workgroups. Three workgroups, one for each area of HCV diagnoses, treatment, and new infections among PWID, will be appointed to design implementation plans and ultimately conduct the ongoing work to monitor each area. The workgroups will be comprised of personnel from the NYSDOH, NYCDOHMH, and other experts as appropriate.

Advisory committee. An advisory committee will be appointed to ensure scientific validity, clinical accuracy, cultural appropriateness, and overall feasibility of the approaches developed by the workgroup. This group will provide feedback on implementation plans and, after implementation begins, will review and provide critical feedback on summary data.

HCV Elimination Dashboard A web-based platform similar to the Ending the Epidemic Dashboard (http://etedashboardny.org/), which tracks progress in ending the NYS HIV epidemic, will provide a summary of information on the elimination metrics and progress toward elimination. The HCV elimination dashboard can be found here: https://hcvdashboardny.org/

RECOMMENDATIONS

Surveillance, Data and Metrics

SDM1: Recommendation: Develop data use agreements, data sharing policies, and a regulatory agenda to facilitate necessary data sharing between public health entities, health care providers, other service providers [e.g., correctional facilities, Syringe Exchange Program (SEPs)], and regional health information organizations.

Description: Data sharing is necessary to ensure the ability to track outcomes in a timely manner across service providers [e.g., newly diagnosed persons referred elsewhere for HCV care and treatment] and maximize collaboration across entities, and sectors conducting and overseeing implementation activities, taking into account state and local regulations.

SDM2: Recommendation: Recognize and support viral hepatitis surveillance as a core public health function of state and local health departments. Systematically evaluate existing health care provider and laboratory-based surveillance systems and develop a robust infrastructure to strengthen surveillance so that key epidemiologic and programmatic questions about the HCV epidemic can be adequately addressed.

Description: Viral hepatitis surveillance involves longitudinal population-based processes, including provider and laboratory-based reporting and timely local health department case investigation, to: 1) detect new or newly reported cases, 2) record demographic information, risk factors, and potential exposures, and 3) add new information (e.g., laboratory test results) to previously reported cases. The monitoring of HCV trends in NYS, including measurement of disparities, disease outcomes, and the effectiveness of prevention measures and treatment, is dependent upon the timeliness, accuracy, and completeness of surveillance data along with expert interpretation of changes in surveillance practices and case definitions over time. Thus, identifying and prioritizing ways to support and strengthen state and local HCV surveillance systems is of critical importance to the accurate monitoring of progress towards eliminating HCV and the success of the HCV elimination initiative.

A formal evaluation of the surveillance systems used by NYSDOH and NYCDOHMH should be conducted and recommendations should be made to address gaps in surveillance including barriers to reporting, such as lack of access to electronic reporting systems and the inability to

accurately collect sexual orientation and gender identity. The recommendations should guide efforts to improve data completeness, timeliness, and accuracy; to identify known exposures and facilitate disease control efforts; and to track metrics related to HCV elimination efforts. Adequate and stable funding should be allocated to provide for electronic systems that allow for accurate case ascertainment, case classification, and deduplication; to support local health department investigation and disease control efforts. For the purposes of metric tracking, data systems or matching processes should allow for case deduplication between all 58 local health department jurisdictions in NYS (57 county health departments and NYCDOHMH), which might require data sharing agreements, policy changes, or new technology. Within 2 years, surveillance systems should be able to reliably identify new infections, new diagnoses, and newly reported cases; to incorporate data from outside sources (e.g., vital records) to record deaths attributable to HCV; and to identify patients with direct or proxy evidence of health care for, treatment of, and cure from HCV infection, and any evidence of reinfection.

SDM3: Recommendation: Estimate baseline status for key outcomes to inform the development of realistic but ambitious targets for these outcomes as part of the NYS HCV elimination plan.
Description: Systematically consider available treatments, epidemiological data, surveillance data, resources, programmatic capacity, HCV-related policies, similar initiatives in other jurisdictions, and mathematical modeling scenarios to estimate baseline status for key outcomes related to HCV elimination in NYS. Set realistic but ambitious targets for these outcomes as part of NYS' HCV elimination plan. Consider the creation of a working group within the initiative that includes people with HCV, for setting and periodically revisiting NYS's targets for HCV elimination. Primary and secondary aggregate HCV elimination outcome metrics should be compiled semi-annually at the statewide, regional or county levels in relation to targets and disseminated to all stakeholders.

SDM4: Recommendation: Systematically track and disseminate information on implementation strategies, efforts and policies that go into the NYS HCV Elimination Plan and that are expected to result in achieving the plan's goals. There must be statewide and county-level data on activities directly supported or marshaled by the plan that are aiming to support the plan's elimination goals.

Description: The HCV elimination plan needs to have a systematic mechanism for tracking new programmatic implementation and policy development in support of the plan's elimination goals. First, partner entities should be identified and their treatment capacity towards implementing the plan initiatives should be described, and aggregated metrics compiled, at the county level. Second, a tracking system should be created to document in aggregate at the county level who is implementing HCV elimination activities and what is being implemented as well as where and when such activities are being implemented. An organization designated by the NYSDOH should be responsible for the management of this implementation tracking system. Aggregate HCV elimination implementation metrics should be compiled semi-annually at the county level in relation to targets and disseminated to all stakeholders.

SDM5: Recommendation: Estimate the size of the population of PWID population and incidence of HCV infection among PWID in NYS.

Description: PWID are the largest population at high risk for acquiring HCV. The most commonly cited estimated size of the NYS PWID population is approximately 140,000. However, it is based only on the state's six largest metropolitan statistical areas, is over 10 years old, and doesn't reflect the current opioid epidemic. This population is highly dynamic, with some members ceasing to inject drugs and new persons beginning to inject. Many of the persons ceasing to inject will require treatment for HCV infection, and all persons beginning to inject will need HCV prevention services. Thus, monitoring and assessing the effectiveness of Eliminating HCV in New York will require statewide knowledge of the size of and turnover in the PWID population and the extent of recent transmission of HCV infection in this population. There are several research studies currently being conducted in NYS that have information that could be used to update old estimates of the size of and turnover in the PWID population in the state and estimate the incidence of new HCV infection in this group. A working group should be formed to integrate currently available information and perform new studies as needed to obtain these estimates. These estimates should also address demographic and geographic subgroups.

SDM6: Recommendation: Systematically track and disseminate timely statewide, regional or county-level information on key HCV elimination outcomes to the initiative's stakeholders, including people infected and affected by HCV, to convey progress towards achieving the goals and targets of the initiative.

Description: Establish a dashboard to serve as a single comprehensive and definitive source of local data to track and report on the HCV elimination plan progress, as well as to help target resources and make appropriate course corrections at the county level when indicated by the data. This dashboard should include information on key outcomes and targets, as well as the status of the implementation efforts. Where time and resources allow, dissemination should take place in forums, including but not limited to peer-reviewed journals, conferences, online resources and community meetings.

Hepatitis C Prevention

P1: Recommendation: Expand the number of SEPs in NYS and the existing SEPs' geographic reach.

Description: NYS currently has 23 waivered SEPs that provide harm reduction services and safer substance use supplies to people who use drugs (PWUD). To meet the needs of the local population, expansion funding is needed to facilitate the establishment of additional satellite sites, mobile services, peer-delivered syringe exchange, and telemedicine or transformation into comprehensive drug user health hubs. Funding may also be used to provide essential HCV prevention supplies for all methods of use (i.e., sniffing, swallowing, smoking, and injecting) and services to screen, treat, and prevent HCV, such as onsite HCV RNA testing, buprenorphine

induction, harm reduction counseling, and focused outreach to populations disproportionately impacted by HCV including formerly incarcerated individuals, people of color, and men who have sex with men.

P2: Recommendation: Fund expanded outreach to support people who use drugs through all methods of use.

Description: Establish a new Youth Prevention Centers network (including mobile) as part of existing SEPs to conduct outreach in nontraditional settings and address all relevant transmission vector supplies – including safer sniffing and/or smoking equipment. Centers would support a variety of programs including specific interventions to delay initiation of injection for opioid users through peer support interventions, such as "Break the Cycle," to reduce the likelihood of experienced injectors assisting non-injectors with their first injections, testing and direct services via telehealth, social and family reintegration.

P3: Recommendation: Expand HCV Prevention Strategies in State and Local Correctional Facilities

Description: Injection drug use, primarily of opioids, is a major risk factor for acquisition or re-infection with HCV. To prevent HCV infection and re-infection, state and local correctional facilities across NYS should increase access to sterile syringes and injection equipment. Additionally, Medication Assisted Treatment (MAT) programs should be implemented and expanded in NYS Department of Corrections and Community Supervision (DOCCS) and local jails. All individuals entering NYS DOCCS or local jails who already receive MAT must have treatment continued. Treatment should also be available to those with Opioid Use Disorder (OUD) who are not on treatment at the time of incarceration. MAT has been shown to reduce injection and is associated with reduction in transmission of HCV and HIV. These medications, along with access to sterile injection equipment, are vital to maintaining HCV cures achieved in NYS DOCCS and/or local jails. Furthermore, inmates with opioid use disorder are significantly more likely to engage in MAT upon release from incarceration if they have initiated or continued methadone or buprenorphine.

P4: Recommendation: Create a NYS Medicaid waiver program to cover expenses of confidential OUD services, including MAT and HCV testing and treatment, for New Yorkers, including adolescents and young adults.

Description: This new MAT Program will increase access to confidential MAT and HCV services for uninsured and under-insured New Yorkers and for commercially insured New Yorkers who want to avoid disclosure of these confidential services through billing statements. NYS residents who are not enrolled in Medicaid and have a personal income under the Federal Poverty Level should be eligible. NYS residents should also be eligible if they are already covered by commercial health insurance and meet the above criteria. Income is based on the covered

individual's income rather than the family income, like the NYS Family Planning Benefits Program which covers confidential family planning services.

P5: Recommendation: Improve access to substance use treatment for young people by increasing primary care and specialty system capacity to screen and treat adolescents and young adults.

Description: Systems should be established to facilitate primary care providers who care for adolescents and young adults to incorporate Screening, Brief Intervention and Referral to Treatment (SBIRT) and buprenorphine prescribing for MAT into routine practice. NYS Office of Addiction Services and Supports (OASAS) and NYSDOH should support adolescent focused SBIRT and buprenorphine certification training and identify local (or via telehealth) substance abuse treatment providers to support those medical providers. Medicaid Managed Care plans should be encouraged to participate in development of innovative payment models to support this work. Adolescent medicine fellowship training in NYS should include didactic and experiential training on adolescent opioid addiction, MAT, and HCV management - including buprenorphine waiver training.

P6: Recommendation: Develop and implement a 2-year pilot study to assess feasibility and effectiveness of a medically supervised program where patients self-administer prescription pharmaceutical opioids (e.g., hydromorphone/dilaudid).

Description: Evaluation for this program will include the clinic's ability to engage a population with a high level of HCV and reduce risky behaviors associated with transmission of HIV, HCV, and bacterial infections. Evidence from Canada and other countries has shown that the injection drug using population benefits from a medically supervised program where patients self-administer prescription pharmaceutical opioids (e.g., hydromorphone), resulting in decreased unsupervised injection and other drug use behaviors that can lead to HCV infection. In addition, this program has been shown to decrease overdoses, decrease mortality, and facilitate ongoing treatment engagement. Recently, the Study to Assess Long-term Opioid Medication Effectiveness in Vancouver, British Columbia, Canada, demonstrated the noninferiority of hydromorphone as compared to diacetylmorphine (i.e., heroin) in terms of efficacy, and the superiority of hydromorphone over diacetylmorphine in terms of decreased adverse events. In 2017, the British Columbia Ministry of Health published the evidence-based Guidance of Injectable Opioid Agonist Treatment for Opioid Use Disorder.

P7: Recommendation: Recognizing that the opioid epidemic is a public health emergency, allow for safer injection facilities across NYS.

Description: Safer Injection Facilities (SIFs) have three decades of research behind them proving that they prevent overdose deaths, provide linkage to care including substance use treatment, reinforce safer injection practices that prevent disease transmission and injection related infections, save public medical expenditures and engage those drug users at highest risk. At the

most pragmatic level, trained staff of a SIF can provide on-site teaching to injectors about best practices to prevent disease transmission and other infections. Testing as well as linkage to care and treatment should be offered at SIFs as they are at SEPs. A research study has already been proposed that should be looked toward as a model of how to evaluate sites, including emphasis on their ability to engage the drug using population and reduce risky behaviors associated with transmission of HIV, HCV, and bacterial infections.

P8: Recommendation: Enhance efforts that raise awareness, provide information and education about preventing HCV for the public, patients, health care providers, social service providers, and elected officials.

Description: As part of a comprehensive approach to prevent HCV, provide increased funding for public campaigns that focus on decreasing stigma, increasing health literacy, and educating the public on the importance of HCV screening, diagnosis, linkage to care, and the possibility of a cure. Some components of beneficial campaigns include annual training of health care providers and social service providers by integrating viral hepatitis information into existing curricula, and expanding current public awareness campaigns using advertisements, distributing literature, media, and social media will aid in decreasing HCV stigma. Ensure messages reach schools and faith-based communities to meet all at-risk individuals. Well-designed health literacy materials both in print and using social media geared to populations at-risk, including PWID, formerly incarcerated persons, MSM, transgender people and affected communities, will serve to reduce the stigma associated with HCV and increase access to treatment. Materials should clearly explain the risk behaviors associated with HCV transmission including injection and non-injection drug use and sexual transmission, especially among men who identify as gay, bisexual or other men who have sex with men. For an effective awareness campaign, materials should be culturally responsive and in multiple languages to prevent stigmatize persons living with or at risk for HCV.

P9: Recommendation: Engage adolescents, young adults and their support systems (i.e., families, teachers, faith leaders) in anti-stigma drug education efforts.

Description: A partnership with the SEPs and other harm reduction organizations should create an anti-stigma drug education campaign; develop a curriculum and programs, including train-the-trainer, for adolescents and their parents where students can safely learn and discuss risks of prescription narcotic pain medication use and recreational opioid use and risks of transition to heroin use, drug injection, and disease transmission.

Hepatitis C Testing and Linkage to Care

TLC 1: Recommendation: Mandate HCV antibody to RNA reflex testing.

Description: Diagnostics for chronic HCV remain limited to two-step testing, and a significant proportion of persons with positive HCV antibody never receive confirmatory testing with HCV

RNA. Mandatory HCV antibody to RNA reflex testing has been shown to improve the proportion of people who receive confirmatory testing, thus effectively eliminating this gap in the care cascade. Reflex testing was recommended in a "*Dear Colleague*" letter from the NYSDOH in November 2015. In September 2017, Article 13 of the NYC Health Code was amended to require all labs to perform HCV RNA reflex testing on all positive HCV antibody specimens. However, rates of reflex testing in facilities across NYS remain far from 100%. Provision of technical support is recommended for laboratories to facilitate HCV antibody to RNA reflex testing in all settings where blood draws can be conducted. NYSDOH, like the NYCDOHMH, should provide benchmarking to compare hospital/health care network achievements in the proportion of HCV antibody tests sent for RNA testing. NYS Clinical Laboratory Evaluation Program (CLEP) should work with laboratories with repeated poor performance on HCV reflex testing, defined as those with reflex testing <90% of all samples run for anti-HCV, to determine barriers to reflex testing and facilitate solutions. Electronic Health Records (EHRs) should eliminate stand-alone anti-HCV as an orderable test and the only orderable antibody test should be "HCV antibody with reflex to HCV RNA." Finally, NYSDOH should also require all labs to perform HCV reflex testing like NYCDOHMH.

TLC 2: Recommendation: Allow sharing of HCV test results to HCV care coordinators and patient navigators.

Description: The absence of point-of-care (POC) testing for confirmed active HCV infection at this time entails a delay in diagnosis and presents a delay in linkage to care. To optimize the impact of HCV screening, positive results of HCV RNA should be routed not only to the ordering provider, but to HCV care coordinators/patient navigators to ensure rapid linkage to care with HCV-treating providers and minimize loss to follow up. This may be done by generating automatic EHR reports of positive HCV RNA and routing them to hepatitis patient navigators, or they may be incorporated into existing HIV reporting chains if no hepatitis navigation program exists.

TLC 3: Recommendation: Implement universal HCV screening of all pregnant women.

Description: HCV infection is a leading cause of liver-related morbidity and mortality. Injection drug use is the most common risk for HCV infection. HCV can be transmitted vertically from mother to child. Vertical transmission occurs in 5.8% of infants born to women who are infected only with HCV and in up to twice as many infants born to women who are also infected with HIV or who have high HCV viral loads. NYS outside of NYC has reported an increase of HCV among women of childbearing age (15-44 years). The most common risk reported among these cases is IDU. Universal, one-time testing for all pregnant woman during their first trimester should be implemented, with repeat screening in the third trimester for women engaging in at-risk behaviors.

TLC 4: Recommendation: Facilitate screening and diagnosis through automatic prompts in EHR systems

Description: EHR prompts such as best practice alerts or clinical decision support (CDS) tools have been shown to significantly improve HCV screening of baby boomers without prior HCV testing in primary care settings and among hospitalized patients. Screening should be implemented using an EHR prompt in clinical settings. For optimal uptake, these CDS tools should be implemented with input of local stakeholders, including physician leadership, IT, and hospital administration. To prevent "alert fatigue," prompts should be one-time only, opt-out with hard stop at lab order entry (blood draw), and paired with an automatic lab order of anti-HCV with reflex RNA when systems allow. For eligible hospitalized patients, automatic anti-HCV antibody with reflex RNA should be built into admission order sets. EHR prompts should be based on internal logic that determines testing eligibility in terms of whether an individual has had a prior test, not prompting if testing has already been done within the health care network served by that EHR.

TLC 5: Recommendation: Expand POC testing to non-medical settings.

Description: Expansion of targeted testing to venues outside of the established health care system is required to diagnose the significant proportion of relatively healthy individuals with HCV who are not engaged in medical care. Support and training should be granted to expand rapid, POC HCV antibody testing and confirmatory testing in outreach settings without medical staff or infrastructure, particularly those settings where patients are deemed high risk for loss to follow-up. Sites must be identified and supported that are likely to serve at-risk populations such as persons who inject or use drugs, MSM, transgender men and women, immigrants from highly endemic areas, persons in neighborhoods with high seroprevalence rates as mapped by surveillance data, homeless persons, and those with a history of incarceration, substance use or mental health issues. Coordination with HIV testing sites should be encouraged and paired dual-routine HIV/HCV testing should become standard of practice at many of these sites. Effort should be devoted to incorporating HCV RNA testing into locations where screening is done to allow immediate access to diagnostic testing.

TLC 6: Recommendation: Expand and extend the New York State HCV Testing Law

Description: Given the national rise in HCV incidence in adults >18 years largely attributable to the ongoing opioid epidemic, there has been growing interest in expanding age-based testing. Universal screening has been shown to be cost-effective in modeling and is now recommended by the American Liver Foundation. Therefore, modification of the NYS HCV Testing Law is recommended to include a mandate for universal one-time HCV opt-out testing (i.e. notifying the patient that the test is normally performed but that the patient may elect to decline or defer testing) of all adults 18 and older in primary care settings (internal medicine, family medicine, and OB/GYN) and in all hospitalized patients. This mandate should be supported for antenatal screening of all pregnant women.

Within emergency departments (EDs), the ability to offer HCV screening is compromised by the need for rapid management of other conditions. However, prevalence of anti-HCV upon screening of baby boomers in one NYC ED was 7.8%, significantly higher than the national estimate, and universal testing in the same ED demonstrated higher than national prevalence. The scope of the law should be expanded to include opt-out testing for all patients 18 and older presenting to EDs. This mandate should also be expanded to apply to student health clinics, sexual health clinics, opioid clinics, mental health clinics and psychiatric admissions.
The 2020 sunset provision in the current NYS HCV testing law would considerably hamper elimination efforts and momentum. The current statutory requirement should be made permanent.

TLC 7: Recommendation: Remove financial barriers to testing and linkage to care

Description: Key strategies for removing financial barriers to testing and linkage to care include the provision of adequate funding for Community Based Organizations (CBOs) who are closely connected and have trusting relationships with high-risk populations to provide testing and linkage to care services; eliminating insurance company and pharmaceutical barriers; and investigating and implementing innovative financing strategies for eligible partners. There is a need to ensure that appropriate reimbursement mechanisms (both private and public) are instituted so that health care delivery sites can afford to integrate these services.

NYSDOH AIDS Institute should expand all current HIV/STI screening and SEP contracts to include HCV testing and linkage to care. New RFAs should be created to target high-risk populations and to address barriers to care. These contracts should fund insurance navigators and patient navigators who will assist in linking patients to care. Finally, additional innovative financing strategies should be investigated and encouraged to support HCV programs, such as 340B and Medicaid Section 1115 Demonstration Projects.

TLC 8: Recommendation: Design screening and linkage to care, and treatment delivery models and processes that better engage complex patient populations (e.g., active drug users, homeless, mentally ill, etc.).

Description: HCV infections in NYS have increased significantly among young people in the past decade, largely attributable to injection drug use. Ongoing HCV transmission is high within this population, presenting a major challenge to elimination. Yet young PWID are a complex population to engage in HCV care. Perceived lack of deservingness of HCV treatment and stigma, perceived lack of referral to treatment, dissatisfaction with provider interactions, and perceived lack of need for treatment have been identified as barriers to HCV testing and care engagement in young PWID. Better, creative strategies and processes for screening and linkage need to be developed for PWID, as well as for the frequently overlapping groups with significant barriers to health care engagement (homeless, mentally ill, criminal justice-involved persons) if strides toward elimination are to be sustainable. There should be increased funding and technical assistance for establishing and promoting POC, repeated HCV testing at least annually at venues

that interface with PWID, for example, youth drop-in centers, syringe exchange programs, peer-delivered syringe exchange programs, lesbian, gay bisexual, transgender, queer (LGBTQ) community centers, alternative to incarceration facilities, substance abuse treatment centers and homeless shelters. NYSDOH and NYCDOHMH should fund and support peer and patient navigators to conduct outreach testing in decentralized and mobile models where patients can be accessed in venues not traditionally served by medical workers. Individuals with professional licenses should be given the ability to screen for HCV (i.e., pharmacists) and receive reimbursement. HCV POC testing should be incorporated into NYC and NYS HIV partner services infrastructure and investigating regulations around partner testing as applied to HCV. HCV testing staff should be trained to encourage people identified with HCV to bring in their injecting network for testing, and NYS should explore incentivization for network identification. To better reach young PWID, increased promotion of HCV screening and education is recommended at community colleges, technical colleges, other higher educational institutions across NYS, and within voluntary occupational wellness programs. Increases in funding are necessary for the implementation of increased screening, and additional funding is required for oversight to ensure appropriate quality control mechanisms are created throughout NYC and the state.

TLC 9: Recommendation: Create tools to improve surveillance and outbreak detection so that testing can be offered to those at risk and follow up provided to those diagnosed with HCV.

Description: Multiple factors contribute to the inconsistent nature of HCV surveillance in NYS, including, but not limited to: a lack of clinical and laboratory awareness of and compliance with testing and reporting recommendations and requirements; the asymptomatic nature of chronic infection; and, insufficient resources for statewide hepatitis surveillance, particularly investigation and confirmation (epidemiological, clinical, laboratory) of infection, and collection, analysis, interpretation and dissemination of data . Currently, case definition and diagnosis are mostly based on electronic laboratory reporting. Thus, an effective surveillance system for HCV infection necessitates an investment in technology to facilitate reporting of high-quality laboratory data. In NYS, this means ensuring compliance with HCV reporting guidelines, including the reporting of both positive and negative HCV RNA test results, accurate and complete data entry in the Electronic Clinical Laboratory Reporting System, and investment in more efficient systems for tracking the spread of HCV and effectively targeting prevention efforts. The spread of HCV can be curtailed by identifying people at risk, testing and treating infected individuals, and implementing community-based prevention measures. Rapid detection of HCV transmission networks is a critical step in this process; however, current surveillance systems and contact tracing methods are labor-intensive and yield incomplete data. Expanded support is recommended for using next generation sequencing technology and automated data analysis systems to allow for rapid identification of HCV outbreaks and transmission networks. Sharing transmission network data with state and local health departments can help target interventions to prevent further spread of the virus. This is best accomplished by investing in surveillance and prioritizing funding to counties and municipalities with above-average incidence and prevalence. Contact tracing for patients diagnosed with acute HCV is recommended. Additional

strategies for improving outbreak detection include expanding outreach and education regarding HCV testing algorithms to both clinical providers and laboratories.

TLC 10: Recommendation: Expand patient navigation and outreach programs

Description: Patient navigation has been demonstrated to successfully identify at-risk individuals with HCV infection and link large proportions to care. Patient navigator-focused inventions, such as the NYC DOHMH's "Check Hep C" program, are estimated to cost $978 per patient, which is low compared with the cost of treatment complications of HCV. At this time, the HCV epidemic is shifting from stable baby boomers engaged in the health care system to young, non-urban PWID with limited health care engagement and to individuals with significant psychiatric illness, homelessness, undocumented status or other structural barriers to obtaining health care. Scale-up of patient navigation with a scope that incorporates outreach to these groups is necessary to identify and link them to care, and once linked, to support patients and providers from diagnosis to cure.

Funding and support are required for health care and CBOs serving at-risk groups to implement HCV navigation programs across NYS based on experienced models such as "Check Hep C." This would incorporate new hiring or workforce development of existing community health workers, establishment of standardized training programs and promotion of navigator services within HCV referral infrastructures across NYS. Navigators are critically needed for sites where HCV can be identified for young PWID and marginalized groups, but where no HCV-treating providers are immediately present. These include, among others, venues such as EDs, drug rehabilitation centers, OB/GYN clinics, sexual health clinics, mental health clinics and hospitals, SEPs, mobile health vans, opioid clinics, student health, community-based or immigrant service organizations, pharmacy-based "minute clinics" and urgent care clinics. Information on navigation services should be added to the NYSDOH HCV Provider website and the online NYC DOHMH HCV Health Map. In addition, a referral helpline should be established for testing staff or patients to facilitate access to navigation services and HCV providers. Once linkage is established, hepatitis navigators should be fully integrated into the health care team, with access to the electronic health record, specialty pharmacies, and representatives for patient assistance programs.

TLC 11: Recommendation: Advocate for better, more flexible HCV tests.

Description: Currently, HCV RNA testing is the only method approved for confirming active HCV infection. Reflexing directly to HCV RNA testing following a reactive antibody screening test is the best way to ensure the required testing is completed. However, very few HCV RNA tests have been Food and Drug Administration (FDA)-approved for HCV diagnosis, and those that are available involve expensive test kits and dedicated instrument systems that may not be amenable for use by low-volume testing laboratories. POC options for HCV RNA testing do not yet exist in the U.S. HCV core antigen testing could offer a more cost-effective, simpler alternative to HCV RNA testing for confirming active infection; however, there are no FDA-approved HCV core antigen tests currently available. Furthermore, all current FDA-approved HCV

diagnostic tests require venipuncture blood collection. This may impede diagnosis because trained phlebotomists are not available at many community-based HCV rapid testing sites. Even when phlebotomy is available, it can be technically challenging to perform on PWID, and many will forego HCV diagnostic testing if venipuncture is required. Dried blood spots (DBS) collected by fingerstick offer a feasible alternative to venipuncture; however, no FDA-approved HCV tests allow for DBS testing.

There is an urgent need for HCV tests and strategies that are faster, simpler, less expensive, and more flexible with respect to test setting, testing capacity and specimen types. New, innovative technologies and strategies may be available to address these needs, but the time and expense it takes to obtain FDA approval and bring a new test to the U.S. market are barriers to improving testing options. In addition, current technologies and strategies should be used to their fullest extent to ensure that HCV testing is reaching the populations at most need.

The NYSDOH should communicate the gaps and needs related to HCV test availability to relevant stakeholders including health care providers, clinical laboratories, community-based programs, advocacy groups and health departments and organize stakeholders to advocate for more HCV test options. The NYSDOH should lead a coordinated effort among the stakeholders to convey the existing gaps in test accessibility to manufacturers and regulatory agencies (i.e., FDA), reinforce the impact of these gaps using robust data, and prioritize the actions needed to close these gaps.

TLC 12: Recommendation: Establish a training and technical assistance center to expand training and other educational opportunities for medical providers, testing and linkage to care staff, and the public.

Description: Provider education surrounding HCV screening has been instrumental in improving HCV testing rates in some settings and in areas lacking electronic health record prompts. Effective provider education should increase awareness and knowledge of HCV risk factors warranting screening, NYS HCV testing law requirements, test result interpretation, effective counseling methods, linkage to care options for chronic HCV-infected patients, and outcomes of HCV treatment linked to directly acting antivirals.

Several educational interventions for providers have been shown to be effective in improving HCV screening rates, including resident-led initiatives in primary care clinics. Also, directed feedback educating providers on their personal screening rates compared with colleagues improved provider adoption of HCV screening guidelines. On-line educational courses demonstrated a reduction in provider knowledge gaps and increased provider capacity to educate and encourage client engagement in HCV care.

To promote these interventions from a state level, statewide engagement from NYS DOH with graduate medical education program leadership is required to integrate trainee-led HCV screening education initiatives into a quality improvement intervention. Technical assistance

should be provided to hospital and outpatient quality departments to help facilities provide comparative data on provider screening and linkage to care rates. The NYS DOH should expand current on-line and in-person provider trainings, with continuing education credits, on HCV for providers in community-based primary care, urgent care, opiate replacement, student health and mental health.

NYSDOH and NYCDOHMH advisories, including a resource list of available trainings, should be disseminated periodically to all state providers of HCV testing guidelines. Finally, to foster focused provider education in high HCV prevalence areas, increased staffing is recommended to support utilization of NYSDOH and NYCDOHMH HCV surveillance data.

Utilization of and increased NYS funding to established partners are recommended to provide trainings for HCV testing staff at CBOs, SEPs, harm reduction settings, homeless shelters and organizations targeting youth. Training should focus on sample collection for HCV diagnostic testing at CBOs. In addition, NYSDOH and NYCDOHMH should lead quarterly trainings for non-clinical sites in HCV rapid testing, sample collection, and counseling. They should also establish a quality control program to track and monitor sites that will conduct specimen collection for HCV diagnostic testing following antibody screening. Support networks should be created for CBO-based HCV testing and linkage staff through monthly calls or regional meetings to share testing and linkage strategies and best practices.

Hepatitis C Care and Treatment Access

CTA 1: Recommendation: NYS should provide clear expectations and policy guidance for payers to ensure access to all clinically appropriate HCV treatment per NYSDOH AIDS Institute Clinical Guidelines Program and American Association for the Study of Liver Disease (AASLD)/Infectious Disease Society of America (IDSA) clinical guidelines and ensure the availability of necessary supportive services for all persons infected with HCV.

Description: As per the guidelines of the NYSDOH AIDS Institute Clinical Guidelines Program and AASLD/IDSA, “Treatment is recommended for all patients with chronic HCV infection, except those with short life expectancy that cannot be remediated by HCV therapy, liver transplantation, or another directed therapy. Patients with a short life expectancy owing to liver disease should be managed in consultation with an expert.” Payers should approve appropriate drug regimens based on the evidence-based guidelines. Payers should not impose restrictions that are based on severity of liver damage (fibrosis), measures of sobriety, previous treatment experience, treatment readiness, or prescriber restrictions. Payers should also not be allowed to deny patients for retreatment, regardless of whether for virologic relapse or reinfection. NYS should monitor insurance providers’ compliance with these recommendations. Payers should be required to submit hepatitis C coverage information including prior authorization requirements to the State for publication on a publicly accessible NYSDOH website. Furthermore, NYS should provide financial support for full coverage of HCV treatment costs to NYS Medicaid plans and

consider additional financial support through other means such as high-cost drug pools, risk corridors, and stop-loss provisions.

CTA 2: Recommendation: Increase resources to address patient barriers to treatment, such as substance use disorders, mental health disorders, cognitive impairment, and other social determinants of health.

Description: Adherence is paramount for successful cure. Often, comorbid psychosocial issues are the biggest barrier for patients. Improved access to harm reduction services, mental health treatment, opiate agonist treatment and other evidence-based interventions improve patient outcomes. Patient navigators, case managers, directly observed therapy, and peer educators are instrumental for successful treatment.

CTA 3: Recommendation: Increase clinical education resources and support for providers regarding HCV diagnosis, management and treatment, particularly for providers in settings with high prevalence or limited HCV provider access. Encourage involvement of non-physician health care providers throughout the entire HCV treatment cascade.

Description: To enhance the capacity of NYS's health care workforce to deliver appropriate and evidence-based clinical services to patients with HCV and, therefore, to improve all patients' ultimate health outcomes, more education resources and support for providers across the full spectrum of care for HCV are needed.

This includes provider education in HCV screening, diagnosis, and management as well as how substance use, HIV co-infection, and mental health disorder intersects with HCV management. This is especially needed in urban and rural communities, which may have high prevalence or limited HCV provider access. Tele-mentoring, HCV telephone support (warmlines), trainings (live and distance learning), preceptorships, mentorships, and clinical toolkits are all potential strategies for increasing knowledge and skills of physicians and non-physician health care providers, such as nurse practitioners, physician assistants, pharmacists, and registered nurses. Furthermore, increasing awareness of scope of practice for non-physician health care providers can encourage involvement of non-physician providers' role throughout the HCV treatment cascade. For example, pharmacists can currently prescribe HCV medications and order labs under a collaborative drug therapy management plan. However, many physicians and pharmacists are not aware of such provisions or are utilizing the collaborative drug therapy management plan. Increasing awareness and encouragement for developing these types of collaborative arrangements should improve access and quality of care and treatment for HCV infection.

CTA 4: Commercial payers should limit out of pocket expenses that pose a barrier to access to HCV treatment.

Description: In some instances, commercial payers require members to pay a percentage of total HCV treatment cost or to pay high premiums for treatment and support services. Often these are cost prohibitive and prevent people from accessing and/or completing treatment. NYS should monitor financial barriers to treatment that may exist in the commercial insurance market and advocate for commercial payers to limit the out of pocket costs incurred by HCV treatment, including the establishment of co-pay programs and the use of co-pay cards.

CTA 5: Recommendation: Increase resources and attention for high risk and/or vulnerable populations: persons living with HIV, transgender persons, persons with substance use disorders, and other key populations that emerge with increased surveillance.

Description: HCV infection disproportionately impacts people with substance use disorders, immigrants, transgender persons, and incarcerated persons. These same patient populations also face systems of stigma and health disparity. Improving health outcomes of these communities requires ongoing efforts to decrease health disparities. This entails increasing provider access, improved medication access, case management and/or care coordination, and strengthening ancillary services including mental health and substance use treatment, as well as harm reduction services and opiate agonist treatment. Providing treatment in diverse, patient-centered contexts, such as in methadone treatment facilities, harm reduction facilities, syringe exchange programs, long term residential drug treatment programs, and jail/prison health centers, will improve treatment access.

CTA 6: Recommendation: Increase uptake of telehealth services by health systems to reach underserved HCV populations with limited specialists.

Description: Telehealth is the delivery of health care by telecommunications technology. Studies have found that patients in rural areas were more likely to receive HCV treatment if their physicians participated in telemedicine. Furthermore, the care provided by telehealth providers is as effective as specialist care. Recognizing that telehealth is a viable option for expanding treatment access to HCV care in underserved and rural settings, more third-party payers are starting to reimburse for telehealth services. However, reimbursement rates remain low, telehealth services are incompletely reimbursed by payers, and many providers remain unaware or unsure of how to effectively integrate telehealth into their practices.
Therefore, increasing awareness of telehealth availability and support for innovative reimbursable telehealth models to reach underserved HCV patient populations is needed. This can include a centralized technical assistance program and/or a tool kit for interested health systems to develop their own telehealth model, train providers on the use of telehealth, advocate for increased HCV telehealth reimbursement, and fund research for cost-effectiveness studies.

Social Determinants of Health

SDH 1: Recommendation: Fully legalize the possession of both syringes and all non- injection drug use equipment and ensure that any drug residue found on any syringe or non-syringe injection equipment, regardless of the syringe or equipment's origin, be excluded from qualifying as criminal possession of a controlled substance.

Description: Section 220.45 of the NY Penal Law establishes a class A misdemeanor for possession of a syringe outside the bounds of participation in a licensed SEP or Expanded Syringe Access Program (ESAP). In practice, it is often impossible for SEP or ESAP participants to prove the origins of a syringe acquired lawfully. The law carries risk of arbitrary police and prosecutorial enforcement, discourages SEP participants from accessing their only safe and legal means to sterile drug use equipment, and prevents secondary distribution of sterile syringes to those individuals who cannot access SEPs or ESAPs. The more sterile syringes that are obtained by PWID, the greater the public health benefits become. This section of law should be repealed. Further, non-syringe injection equipment, including cotton filters and "cookers" used to prepare drug solution, are known to transmit HCV. These are considered drug paraphernalia under section 850 of the General Business Law. References to all injection equipment as defined in the General Business Law should be repealed. Furthermore, while section 220.03 of the Penal Law allows for possession of a residual amount of a controlled substance when discovered in a used syringe obtained from a SEP or ESAP provider, no such waiver exists for other injection paraphernalia. Section 220.03 of the Penal Law should be amended to waive criminal liability for possession of drug residue on any used injection equipment.

The criminalization of syringes is also a public health and safety concern for law enforcement personnel. One in three officers reported being stuck by a syringe during their career. Allowing access to syringes has been shown not only to reduce needlestick injuries to law enforcement and to curb the spread of blood borne disease but has even proven to reduce crime and drug use in areas where such laws have been enacted. In the event that a needlestick injury does occur, robust and legal syringe access helps to make it far less likely that a syringe will be infectious.

SDH 2: Recommendation: Revise the ESAP to eliminate the 10-syringe cap and lift advertising and other unnecessary restrictions of the ESAP.

Description: Established in 2001 and overseen by the NYSDOH, the 2,500 NYS pharmacies participating in the ESAP provide vital access to sterile syringes, especially in rural locations where SEPs are rare or nonexistent. Current public health law prevents ESAP providers from selling more than 10 syringes per transaction, prohibits the programs from advertising syringe availability, and often enforces unnecessary "safety" procedures with each transaction. Removing these barriers will improve syringe access, save lives, save money, and serve as a simple step toward significantly reducing the harms of injection drug use. Eliminating the cap on syringe purchases at ESAPs would improve the likelihood that someone would use a new syringe with each injection. It would also support secondary distribution to other PWID who are not able to access the ESAP. Allowing ESAPs to advertise would create pathways to public health

education and reach individuals who may be completely unaware of safer drug use options in their area.

SDH 3: Recommendation: All jails and prisons in NYS should implement opt-out HCV testing. Chronically infected individuals who are on direct-acting antivirals (DAAs) at the time of their admission to jail or whose jail sentence is sufficiently long to complete treatment should be treated. Chronically infected state inmates should all be offered treatment.

Description: Given the high rates of HCV seroprevalence in the US incarcerated population, it is estimated that approximately 30% of all persons with HCV infection in the US spend at least part of the year in a correctional institution. The AASLD/IDSA HCV Guidance Report recommends opt-out HCV testing in correctional settings. The US Preventive Services Task Force and the WHO also recommend that all incarcerated persons be tested for HCV.

In jails in NYS, the median length of stay is 15 days, making on-site treatment not feasible for many inmates. Therefore, NYS should prioritize testing and linkage to medical care in the community upon release from incarceration, as has been implemented in jails in other states. For inmates who will be staying in jail long enough to complete HCV treatment, treatment should be offered, as has been piloted successfully in the NYC jails. Given the associated costs, novel mechanisms for funding must be considered.

It has been the policy of the NYSDOCCS, since 2018, to screen all incoming inmates for HCV. It is the intention of NYSDOCCS to test the entire prison population for HCV. It is NYSDOCCS' current policy to consider treatment for any chronically infected person regardless of the patient's level of liver fibrosis. All DOCCS inmates must be offered treatment and care for chronic HCV that adheres to AASLD/IDSA guidelines.

SDH 4: Recommendation: Improve access to health care, including both MAT and HCV treatment at SEPs.

Description: SEPs should focus on efforts to provide both general medical services for PWUD and HCV testing and treatment. Harm reduction programs successfully engage the most at-risk PWUD, and co-located health services would allow the highest risk PWUD, who might not otherwise access any health care, the ability to immediately connect to care. Clinical care should be coordinated and co-located with services that address basic needs including food, housing, counseling and advocacy, access to safe injection equipment and harm reduction education, as well as social support. For marginalized populations living in precarious circumstances, such services are essential to establishing the stability that allows them to take care of their health. Providing basic health care services such as access to MAT, including buprenorphine, in non-traditional settings such as syringe exchange and other harm reduction programs would help expand access to MAT, in turn helping to reduce the use of injection drugs and reduce the risk of HCV infection and transmission. Most of these non-traditional settings cannot provide co-

located medical services due to burdensome administrative processes, including the Certificate of Need process. This limits access to essential health care services for vulnerable populations and creates a barrier for organizations to seek reimbursement through billing mechanisms. The AIDS Institute should work with the NYSDOH Office of Primary Care and Health Systems Management to facilitate the review of Certificate of Need, Article 28 establishment and extension clinic applications to facilitate the delivery of basic medical services to PWUD in non-traditional settings such as SEPs and shelters. Given the crisis nature of the opioid epidemic and the impact on public health, including increased rates of HCV transmission, the NYSDOH should consider whether waivers of existing regulatory requirements could be implemented in order to allow for expedited licensing so that these non-traditional settings (both facility and mobile based) can provide, and be reimbursed for, limited medical services, including MAT.

SDH 5: Recommendation: Continuity of HCV care between jails, prisons, and the surrounding community should be supported by a multidisciplinary team of patient navigators, discharge planners, and health care providers.

Description: While someone is incarcerated, transitions between correctional facilities and the community are common and impact the continuity of HCV care. Following arrest, individuals are held pre-trial in local jails. If sentenced, they may be transferred to state prison. At several points in this trajectory, return to the community is possible. Such transitions are often associated with disruptions in continuity of care. This is particularly true for individuals returning to the community after incarceration due to competing priorities that range from social to structural. Multidisciplinary care teams consisting of patient navigators, discharge planners, and health care providers should be in place to keep track of individuals who are at various stages of the HCV care cascade in the criminal justice system. These efforts should be supported by EHRs where available and patient flow charts (such as excel spreadsheets) to minimize losses to follow up. At intake, screening should be performed to assess whether an individual is already on treatment and, if so, it should be continued. Additionally, length of stay should be evaluated prior to treatment initiation to minimize treatment interruption. If direct acting antiviral (DAA) therapy can be delivered prior to release or transfer, data show corrections-based HCV treatment is equivalent to community-based treatment. For individuals who will be transferred to prison, continuity should be maintained through medical hold or effective 'hand-off' to the receiving facility. For those who are pending release prior to treatment completion, efforts should be made to provide take-home or carry medication to minimize treatment interruption upon return to the community. For those who have not been initiated on treatment, a discharge planning team should meet with the patient prior to release to assess community reentry needs and identify a clinic where that individual can be treated. Re-activation of health insurance including Medicaid 30 days prior to reentry should be facilitated by a discharge planner. Efforts should be made to confirm sustained virologic response either in the correctional facility or upon return to the community. Regardless of the transition in care, a summary of medical status should be provided to the patient to maximize continuity of care.

SDH 6: Recommendation: Support evolution of NYS Office of Addiction Services and Supports (OASAS) policy away from an abstinence-only service model.

Description: While NYS OASAS has traditionally promoted an abstinence-based service model, the recently proposed changes to the NYS OASAS regulations setting out service standards for the delivery of Chemical Dependence Services incorporate and promote evidence-based harm reduction and patient-centered approaches. This is a significant change in the focus of the delivery of NYS OASAS services. These proposed changes shift program goals and practices away from abstinence-only service models to include and promote the use of harm reduction principles and approaches in the delivery of NYS OASAS services. Included is the change in language describing program goals from "abstinence" only to "recovery" and achieving patient-centered goals. While there are still areas for clarification in the proposed regulations, the shift from abstinence only to incorporating a harm reduction approach is a positive development. In addition, NYS OASAS developed and disseminated to NYS OASAS-certified providers a new Patient-Centered Care Guidance document. As one of its principles, this guidance recognizes that person-centered treatment planning includes working with people whose treatment goal may be something other than abstinence, including reducing use and minimizing risk associated with the individual's substance use pattern.

SDH 7: Recommendation: Focus efforts on key target populations who the health care system has historically not engaged.

Description: A change in the demographics of populations impacted by HCV has coincided with multiple changes in public policy in NYS, reframing substance use disorder as a public health issue rather than a criminal justice issue. While these sensible policy changes should be celebrated, there must be recognition that these changes only arrived once affluent white communities were hit with an opioid and overdose epidemic. Such a response has given communities of color, low-income communities, and LGBTQ communities the sense that their suffering from harms associated with drug use did not warrant such a response. This experience, and the mistrust, anger, insult, and sorrow these communities feel in the broader context of historic public health policy that has not always been kind to them must be acknowledged, validated, and studied or HCV policy may be unable to reach these communities.
PWUD, people in recovery, people with mental illness, MSM, transgender people and women of color all suffer disproportionately from chronic HCV. The diversity of these groups makes it hard to target all communities at risk with a single message. Partnerships are recommended with the many community groups that represent and serve the needs of communities with the highest HCV prevalence to gain their trust. It is important to work with groups that engage and represent young PWUD, MSM at risk for and living with HIV, and transgender women. These community-based groups must play a critical role in developing and leading educational campaigns, in partnership with government entities. Educational materials must address HCV prevention, testing, and treatment as well as other related health issues. Campaigns and materials must be culturally appropriate and available in English, Spanish, and other languages as appropriate. Training of medical providers across specialty areas on culturally and linguistically

sensitive care for PWUD, MSM, and transgender individuals is recommended. The principles of trauma-informed care must be included in all trainings. Health care providers who already provide services to the highest risk groups and vulnerable populations (i.e., HIV providers, substance use providers, providers serving the LGBTQ community) should be targeted for training to improve their capacity to offer HCV-related services.

SDH 8: Recommendation: Address barriers to transportation, housing instability and employment among people living with HCV.

Description:

Transportation barriers to health care access are common and greater for vulnerable populations. These impact not only access to provider appointments but also access to pharmacies and medication adherence. Access to transportation was one of the barriers most commonly identified across NYS in the 2016 HCV listening sessions hosted by VOCAL-NY. Dedicated funding is needed for transportation to and from medical appointments for patients with chronic HCV who are covered through Medicaid. In many areas of the state, people must travel great distances to see a provider able to treat HCV. The implementation of mobile medical units that could travel to different areas of the state and bring HCV care to areas that are currently underserved should be explored.

The 2016 NYC HCV Elimination Gaps Analysis found that 61% of respondents reported housing instability prevented patients from getting HCV treatment. Non-engaged patients are significantly more likely to be homeless than patients engaged in care. Studies find that health care providers identify housing instability as a barrier to HCV treatment and prescribe DAAs less frequently to homeless patients. Several approaches to improving HCV treatment uptake among unstably housed New Yorkers are proposed. Resources from the existing NYS Medicaid Redesign Team Supportive Housing Initiative could be specifically allocated for housing for people living with HCV. A medical respite model, in which people who are unstably housed are given temporary supportive housing while undergoing medical treatment, should be considered. It has been shown to provide a cost-effective model for treating homeless people requiring long-term IV antibiotic treatment and could readily be adapted for HCV treatment. We suggest that NYS consider funding to study such a program. Novel models of safe medication storage and adherence support should be considered for patients who are marginally housed. Safe storage of HCV medications should be made available for all patients residing in the shelter system. Medications can also be stored and administered at other sites where people who are homeless receive services, such as SEPs.

Employment assistance programs should be available to persons living with HCV. Where we work influences our health, not only by exposing us to physical conditions that have health effects, but also by providing a setting where healthy activities and behaviors can be promoted. Work can provide a sense of identity, social status and purpose in life, as well as social support. For most Americans, employment is the primary source of income, giving them the means to live in homes and neighborhoods that promote health and to pursue health-promoting behaviors. In addition,

most Americans obtain their health care insurance through their jobs. Not only does work affect health; health also affects work. Good health is often needed for employment, particularly for low-skilled workers. Lack of employment among those who are unable to work because of ill health can lead to further economic and social disadvantage and fewer resources and opportunities to improve health.

SDH 9: Recommendation: Drug court personnel must be trained in evidence-based treatment for OUD and principles of harm reduction.

Description: Training for drug court personnel, including judges, prosecutors, defense attorneys, parole officers, and other court employees, must facilitate the understanding that OUD is a chronic relapsing medical condition, rather than a moral failing. Relapse must be dealt with as an expected complication of OUD rather than a "violation" warranting punishment. The threat of incarceration should not be used to force a person to receive OUD treatment. Harm reduction seeks to provide low threshold non-judgmental services to people who use drugs and prevent the harms associated with drug use. Such services do not require abstinence and can be a gateway to OUD and HCV treatment. Its principles should be adapted when providing such treatment to people who are in contact with the criminal justice system. OUD treatment modalities should be neither unnecessarily withheld, nor coerced, especially in drug court. Treatment must be patient led. Drug court personnel must receive training in the principles of MAT (i.e., methadone, buprenorphine, naltrexone) and be made aware of the evidence proving the efficacy of this approach in reducing drug use, recidivism, overdose, and HCV and HIV transmission.

SDH 10: Recommendation: Support criminal justice diversion programs for PWUD.

Description: NYS jurisdictions should move to adopt programs to divert individuals from the criminal justice system for low-level drug possession into harm reduction-based care services such as syringe exchange programs. One such program is the Law Enforcement Assisted Diversion (LEAD) program that was piloted in Albany using resources that were available through the Medicaid Redesign initiative. This initiative formalizes relationships among harm reduction agencies and law enforcement, representing a public safety-public health collaboration. LEAD is a holistic approach initiated by law enforcement and involving the broader community in a patient-centered, trauma-informed approach to care and services for PWUD. The LEAD model facilitates partnerships among often disparate entities, including law enforcement, the criminal justice system, harm reduction and social service providers, medical institutions, faith-based communities and behavioral health care systems.

Data from LEAD Albany is still being evaluated. However, evaluation studies of other LEAD programs, such as the one in Seattle, have more published evidence supporting their approaches and show a positive impact on recidivism, housing and other benefits for PWUD. The Social Determinants of Health Workgroup endorses the recommendation of the NYSDOH AIDS Institute

Drug User Health Advisory Group to establish a committee to assess the feasibility and determine implementation strategies for a scale-out of LEAD programs statewide. NYS should also identify and evaluate other similar models.

SDH 11: Recommendation: Promote the use of incentives to improve HCV care engagement among PWUD.

Description: Successful models already exist for the use of incentives to reduce HIV transmission by achieving and maintaining an undetectable viral load. Housing Works launched its "Undetectables" program in March 2014. The program has since been expanded to other community-based organizations through funding from the AIDS Institute. Recently, a similar program was launched by Amida Care, a special needs Medicaid managed care plan, to incentivize its members to achieve and maintain viral load suppression. These models can be adapted for use in HCV treatment and adherence. Many HCV providers and patients have numerous competing priorities, including other chronic conditions, unmet subsistence needs and behavioral health issues. The use of incentives for HCV treatment engagement and adherence helps to keep attention on achieving the key goals of engagement in HCV treatment and achieving a cure. For providers, including Medicaid managed care plans and health homes, incentivization could be built into the reimbursement structure. For patients, incentives such as gift cards or non-cash rewards could be provided for initiating treatment, keeping appointments, adherence milestones, achieving an undetectable viral load, and sustained virologic response. New computer-based and social-media technologies may present opportunities for monitoring and encouraging HCV treatment in ways that were not previously possible.

SDH 12: Recommendation: Expand access to Medicaid Health Homes for people with HCV mono-infection.

Description: In order to effectively address the structural barriers to HCV treatment, referrals to the full range of existing care coordination systems to meet the non-medical needs of low-income people with HCV are critical. For Medicaid enrollees, the framework for this care coordination system already exists in NYS in the form of the Health Home program. While persons who are HCV positive and have another co-occurring chronic condition are eligible for Health Home care coordination services, many HCV mono-infected individuals are currently ineligible. It is just as critical for a person mono-infected with HCV to access care and treatment early before liver damage and the other consequences of HCV infection occur as it is for a person who has HCV and another chronic condition. The eligibility criteria for Health Home Services should be expanded to include HCV diagnosis as a unique qualifier to leverage the existing care coordination framework of Health Homes to more effectively link the HCV mono-infected population to housing programs and other support services addressing social determinants of health.

SDH 13: Recommendation: Promote training to destigmatize drug use and people who use drugs (PWUD).

Description: Most new HCV infections occur in PWUD, a highly stigmatized population. This stigma can be a barrier to a wide range of opportunities and rights. NYS should promote "person-first" language to describe PWUD; for example, "person with a substance use disorder" rather than "addict." All internal and public communications from state agencies should use appropriate, person-centered language when referring to drug use and the people who use them. Using the glossary developed by the Drug Policy Alliance as a guide, trainings on the use of person-centered language and principles of harm reduction should be developed for all professionals who work with PWUD.

Health care workers, law enforcement officers, and EMS workers should also be provided with education on harm reduction and on providing stigma-free services to PWUD. NYS should require continuing education credits focused on the harm reduction approach to working with PWUD for any professional who contributes to behavioral health counseling, pharmacists, and medical personnel. In addition, stigma-free, harm reduction-focused approaches to working with PWUD should be added to the curriculum in all university settings for medical students, residents, counselors, and social workers. This can be done by developing programs to foster collaborations between harm reduction agencies and educational institutions to promote and develop culturally competent harm reduction educational opportunities.

SDH 14: Recommendation: Collect data on social determinants of health among people living with HCV and assist agencies with their ability to assess social determinants of health.

Description: New York State has taken a leadership role in addressing social determinants of health (SDH). The NYS Medicaid Redesign Program recognizes housing, education, poverty, and nutrition as drivers of medical utilization, cost, and health outcomes. Also, in January 2018, the NYS DOH established the Bureau of Social Determinants of Health within the Office of Health Insurance Programs to address SDH in NYS. To assist in identifying the barriers to care and health disparities, indicators of the major SDH—such as housing instability, economic status, job status, food insecurity, and availability of transportation—should be added as indicators to electronic health records. In conjunction with Medicaid Redesign, the value-based payment roadmap, and the BSDH, New York has already created a framework for organizations to incorporate social determinants of health into their practices. However, health care and social services agencies still face challenges in integrating this information in their practices and programs. Resources in the form of technical assistance, provider tools and funding should be provided to agencies to assist with these steps. In addition, to scale the data collection and distribution for analysis within health care settings and for action within non-health care settings, other steps should be taken including: using standardized code systems to represent social determinants, developing a standard assessment tool to standardize data collection, and developing and sharing best practices for methods of collection, distribution and usage of the data. Existing frameworks, such as leveraging the Statewide Health Information Network-New York (SHIN-NY) for community-based organizations and expanding SHIN-NY to exchange non-clinical data points for social determinants of health, should be employed in the scale-up of data collection.

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ACRONYMS

AASLD	American Association for the Study of Liver Disease
CBO	Community based organization
CDS	Clinical decision support
CLEP	Clinical Laboratory Evaluation Program
DBS	Dried Blood Spot
EHR	Electronic Health Record
ESAP	Expanded Syringe Exchange Program
HCV	Hepatitis C Virus
IDSA	Infectious Disease Society of America
LGBTQ	Lesbian, Gay Bisexual, Transgender, Queer
MAT	Medication Assisted Treatment
MSM	Men who have sex with men
NYS DOH	New York State Department of Health
NYS DOCCS	New York State Department of Corrections and Community Supervision
NYS OASAS	New York State Office of Addiction Services and Supports (formerly Alcoholism and Substance Abuse Services)
NYC DOHMH	New York City Department of Health and Mental Hygiene
OUD	Opioid Use Disorder
POC	Point of Care
PWID	People Who Inject Drugs
PWUD	People Who Use Drugs
RNA	Ribonucleic Acid
SBIRT	Screening, Brief Intervention and Referral to Treatment
SDH	Social Determinants of Health
SEP	Syringe Exchange Program
SPH	School of Public Health
SIF	Safer Injection Facility
SHIN-NY	Statewide Health Information Network – New York
TF	Task Force
WG	Workgroup

APPENDICES

APPENDIX A: NYS HEPATITIS C ELIMINATION TASK FORCE MEMBERS

Matthew Akiyama, MD, MSc
Assistant Professor of Medicine at Montefiore Medical Center/Albert Einstein College of Medicine

Matthew Akiyama, MD, MSc, is an Assistant Professor of Medicine at Montefiore Medical Center/Albert Einstein College of Medicine. Dr. Akiyama is a physician-investigator whose research focuses on hepatitis C among socioeconomically marginalized populations with an emphasis on the intersection of hepatitis C and the criminal justice system. Dr. Akiyama is the recipient of NIH and institutional funding to develop and test innovative strategies to improve the hepatitis C care cascade among individuals with justice-involvement and people who inject drugs. Dr. Akiyama is also active in correctional and community-based advocacy and leadership. Dr. Akiyama has served as an expert consultant for the United States Department of Health and Human Services, National Hepatitis C in Corrections Network, and National Alliance of State & Territorial AIDS Directors, among others. Dr. Akiyama completed an Infectious Diseases Fellowship at New York University and a Master of Science in Medical Anthropology at University College London in London, England.

John Barry
Executive Director of the Southern Tier AIDS Program (STAP)

John Barry is a University of Chicago graduate with a degree in Social Service Administration and is a licensed social worker. John has 30 years of experience in the fields of HIV, substance use treatment and mental health in both direct service and administrative roles. John has also taught as an adjunct instructor at both SUNY Cortland and Binghamton University. John is currently the Executive Director of the Southern Tier AIDS Program (STAP). STAP was one of the initial three pilot sites for the state's Drug User Health Hub initiative and STAP staff have conducted published research on Hepatitis C and injection drug use in rural areas.

Jack Beck
Advocate for Incarcerated Individuals

Jack Beck retired in January 2019 from the Correctional Association (CA) where he worked from 2004 through 2018. Jack managed all aspects of the Prison Visiting Project's work, facilitating prison visits, writing reports and policy materials, directing legislative strategy, and supervising staff. Jack is also a representative for incarcerated individuals on the Academy of Medicine Institutional Review Board and has consulted with federal officials about regulations concerning research on incarcerated individuals. Prior to joining the CA, Jack was a Senior Supervising Attorney at the Prisoners' Rights Project of the Legal Aid Society for 23 years, specializing in medical care issues, with focus on HIV/AIDS and Hepatitis C. Jack is a nationally-recognized expert on prison health care and a member of several coalitions concerned with medical and mental health care in prisons that advocate for improved care for people in prison. Jack received a J.D. from the University of Virginia School of Law and a Bachelor's in Physics from Rensselaer Polytechnic Institute.

David Bernstein, MD

Chief of the Division of Hepatology, Northwell Heath University and Long Island Jewish Medical Center; Director, Sandra Atlas Bass Center for Liver Diseases at Northwell Health; Vice Chairman of Medicine for Clinical Trials at Northwell Health; Professor of Medicine and Education at the Hofstra Northwell School of Medicine

David Bernstein, MD, is the Chief of the Division of Hepatology at Northwell Health University Hospital and Long Island Jewish Medical Center and Director of Sandra Atlas Bass Center for Liver Diseases at Northwell Health. Dr. Bernstein is the Vice Chairman of Medicine for Clinical Trials at Northwell Health and is a Professor of Medicine and Education at the Hofstra Northwell School of Medicine. Dr. Bernstein has extensive experience in the academic setting, as well as developing and implementing policies and best practices in hepatology for hospital and outpatient care. Dr. Bernstein received a medical degree from SUNY- Stonybrook, in Stonybrook, NY in 1988 and completed postgraduate training with an internal medicine internship and residency at Montefiore Medical Center in Bronx, New York. Dr. Bernstein completed a gastroenterology fellowship and a hepatology fellowship at the University of Miami Affiliated Hospitals in Miami, Florida.

Gale Burstein MD, MPH

Erie County Commissioner of Health; Clinical Professor of Pediatrics at the Jacobs School of Medicine

Gale Burstein, MD, MPH, is the Erie County Commissioner of Health and a Clinical Professor of Pediatrics at the Jacobs School of Medicine in Buffalo, NY. Dr. Burstein chairs the Erie County Opioid Epidemic Task Force. In 2017 Erie County experienced a decline in opioid related deaths. Dr. Burstein participates in writing national adolescent health guidelines and has been published in scientific peer review journals. Dr. Burstein received a MD from Jacobs School of Medicine in Buffalo, NY; completed pediatric residency at Case Western Reserve University in Cleveland, OH; received Adolescent Medicine fellowship training at University of Maryland and completed an STD Prevention fellowship and Masters in Public Health at Johns Hopkins University in Baltimore, MD. As a CDC medical officer, Dr. Burstein worked on adolescent STI prevention programs and policy and rapid HIV testing implementation.

Eli Camhi, MSSW, LMSW

Owner, Generative Resources, LLC

Eli Camhi, MSSW, LMSW, is currently the owner of Generative Resources, LLC, a consulting firm that provides assistance to healthcare payers and providers. For the past 25 years Eli has been engaged and employed in organizations that either provide primary care or managed care to the HIV community in New York City. From June 2001 to May 2017 Eli managed Select Health, a Medicaid HIV Special Needs Plan first at New York-Presbyterian Hospital and then at the Visiting Nurse Service of New York. From 1993 to May 2001, Eli served as Administrative Director of the AIDS Center at Montefiore Medical Center. Eli is also a fiscal consultant to the HIV/AIDS Bureau of the Health Resources and Services Administration. Eli received a Master of Science in Social Work from the University of Texas at Austin in 1988, is a published author, a member of the National Association of Social Workers and a fellow of the New York Academy of Medicine.

Don C. Des Jarlais, PhD

Professor of Epidemiology, Social and Behavioral Sciences at College of Global Public Health New York University; Adjunct Faculty of Psychiatry and Preventive Medicine at the Icahn School of Medicine at Mount Sinai; Guest Investigator at Rockefeller University in New York

Don C. Des Jarlais, PhD, is a leader in the fields of AIDS and injecting drug use and has published extensively on these topics including articles in: New England Journal of Medicine, JAMA, and Science and Nature. Dr. Des Jarlais is active in international research, having collaborated on studies in many different countries and serves as consultant to various institutions, including the CDC, NIDA, the National Academy of Sciences, and the World Health Organization. Dr. Des Jarlais' s research has received numerous awards, including a New York State Department of Health Commissioner's award for promoting the health of persons who use drugs. Dr. Des Jarlais has formerly served as a Commissioner for the National Commission on AIDS, as a Core Group Member of UNAIDS Reference Group on HIV and Injecting Drug Use and as a former member of the Scientific Advisory Board of the President's Emergency Plan for AIDS Relief (PEPFAR) Scientific Advisory Board.

C. Virginia Fields, MSW

President and CEO, National Black Leadership Commission on AIDS (NBLCA)

C. Virginia Fields, MSW, was appointed the President and CEO of the National Black Leadership Commission on AIDS, Inc. (NBLCA) in 2008. C. Virginia brings to the position over eighteen years of experience as an elected official in New York City and has garnered widespread praise as a consensus builder around city, state and national policy issues. Under C. Virginia's leadership, NBLCA has grown to include twelve national chapters and over 150 partnerships, including working with a broad spectrum of health, civic, public, social justice and community leaders, persons living with HIV/AIDS, faith-based organizations and other stakeholders, helping to expand NBLCA's national and local programs. NBLCA's Core focus areas include community mobilization; counseling, testing and linkage to care; capacity building and technical assistance; advocacy and policy; and leadership training and development. C. Virginia spearheaded establishment of the National African American Hepatitis C Action Day and annual "State of HIV in Black America" Conference. Appointments include the AIDS Advisory Council and the NYS *Ending the Epidemic* Task Force. C. Virginia earned a BA Degree from Knoxville College, a Master's in Social Work from Indiana University and a Sixth Year Certificate in Administration from New York University. C. Virginia is a recipient of numerous honors and awards for leadership in health, education, social justice and economic issues. C. Virginia resides in New York City.

Ray Ganoe

President/CEO, Evergreen Association, Inc.

Ray Ganoe currently serves as the President/CEO of the Evergreen Association, Inc. The Association includes The Pride Center of WNY, Community Access Services and Evergreen Health. Ray has over 25 years of experience working in the field of HIV and substance abuse. Currently Ray's organizations have 450 employees and an $80 million annual budget and serve

the eight counties of Western New York. Ray has a Master of Science in Healthcare Administration, a Bachelor of Social Work, is a Health Leadership Fellow, a Harvard Business school graduate and has a CASAC (retired). Ray is a recipient of the Buffalo Ambassador Award, the WebMD Excellence in Service award and has received the Distinguished Service Award from the NYS Commissioner of Health for exceptional accomplishments in HIV Service Delivery. Ray is the Treasurer of SNAPCAP and serves on the NYS Hepatitis C task force, the U.B. Dean's Advisory Council and the Board of Buffalo United Artists.

Clifton Garmon, MSW
Senior Policy Analyst, VOCAL-NY

Clifton Garmon, MSW, is the Senior Policy Analyst at VOCAL-NY and monitors, examines, and promotes policies designed to improve the quality of life for marginalized communities, while engaging and educating elected officials across the state through grassroots lobbying. Clifton's work is particularly focused on advocating for the health and well-being of people who use drugs, coordinating VOCAL-NY's statewide organizing efforts and hepatitis C elimination throughout New York State.

Annette Gaudino
HIV/HCV Project Co-Director, Treatment Action Group

Annette Gaudino, HIV/HCV Project Co-Director, Treatment Action Group, works to advance hepatitis C elimination across U.S. jurisdictions, with special attention to the needs of people who use drugs and incarcerated people. Annette serves on the Steering Committee of the NY State Hepatitis C Elimination Campaign, is a member of the National Hepatitis Corrections Network (NHCN), and in 2014 was a founding member of the NY State Hepatitis C Coalition. Annette was previously Statewide Coordinator for the Campaign for NY Health, contributing to the passage of the NY Health Act single-payer bill through the State Assembly for the first time in 20 years. Annette has over 25 years of experience in the LGBT, HIV/AIDS, and harm reduction movements.

Pete Hill
Native American Community Services of Erie and Niagara Counties, Inc.

Pete Hill is an enrolled member of the Cayuga Nation, Heron Clan and currently the "All Our Relations" Project Director at Native American Community Services of Erie and Niagara Counties, Inc. (NACS). Pete has worked at NACS for over 26 years, spending most of that time with several youth and community programs addressing alcohol/substance abuse prevention, suicide prevention, crisis intervention, teen pregnancy prevention, and HIV risk reduction. Pete has integrated many Native American cultural teachings and approaches into program design, evaluation, and strengths-based approaches. Pete has also been heavily involved with the development of new approaches and initiatives such as the "All Our Relations" Project to help the community to move beyond the impact of historical traumas and related factors that have negatively impacted the inter-generational health and vitality of Native American people.

David Holtgrave, PhD

Dean, School of Public Health, University at Albany, State University of New York (SUNY)

David Holtgrave, PhD, has served as the Dean of the School of Public Health, University at Albany, State University of New York since March 2018. Dr. Holtgrave is also an appointed SUNY Empire Innovation Professor. From August 2005 through February 2018, Dr. Holtgrave served as Professor and Chair of the Department of Health, Behavior and Society at the Johns Hopkins Bloomberg School of Public Health. Dr. Holtgrave also held joint appointments in the Johns Hopkins schools of medicine and nursing. Dr. Holtgrave has worked extensively in the field of HIV prevention since 1991 and research has focused on the effectiveness and cost-effectiveness of HIV prevention interventions and the translation of those study findings to HIV prevention policy. Dr. Holtgrave previously served as member and then vice-chair of the Presidential Advisory Council on HIV/AIDS during President Obama's Administration. Prior to Dr. Holtgrave' s position at Johns Hopkins University, Dr. Holtgrave was a professor at the Rollins School of Public Health at Emory University, served as Director of the Division of HIV/AIDS Prevention – Intervention Research and Support at the U.S. Centers for Disease Control and Prevention (CDC), and was a faculty member at the Center for AIDS Intervention Research at the Medical College of Wisconsin. Dr. Holtgrave has authored or co-authored over 300 professional publications.

Brad Hutton, MPH

Deputy Commissioner, Office of Public Health, New York State Department of Health

Brad Hutton, MPH, received a Bachelor of Arts from Columbia University and Master of Public Health from the University at Albany School of Public Health, where Brad also completed all requirements except the dissertation for a PhD in epidemiology with concentrations in infectious disease and chronic disease epidemiology. Brad has been with the New York State Department of Health for twenty-four years, and currently serves as the Deputy Commissioner for Public Health. Brad oversees the Centers for Community Health and Environmental Health, the AIDS Institute, the Department's Public Health Laboratory (the Wadsworth Center), the Office of Health Emergency Preparedness and Office of Public Health Protection. Previously, Brad directed the Department's Center for Community Health, the Bureau of Early Intervention, and its Cancer Services Program. Brad has served on several committees that advise the Centers for Disease Control and Prevention on cancer control and served on the Institute of Medicine's Committee to Improve Mammography Quality. Brad is also the Commissioner's Designee to the Drinking Water Quality Council, a new advisory body created in legislation in SFY 2017-18.

Christine Kerr, MD, AAHIVS

Medical Director of HIV and Hepatitis Programs for Hudson River HealthCare, Inc. (HRHCare)

Christine Kerr, MD, AAHIVS, is the Medical Director of HIV and Hepatitis Programs for Hudson River HealthCare, Inc. (HRHCare), a network of 30 Federally Qualified Health Centers (FQHC) serving nearly 150,000 predominantly low-income patients living throughout an 11-county region of New York State's Hudson Valley and Long Island. Dr. Kerr has been providing direct HIV care in the Hudson Valley for 10 years, and currently, provides clinical oversight for the Health Center's *Genesis* program of HIV care and treatment, which serves more than 1,000 patients living with HIV. Dr. Kerr's areas of expertise include: treatment of HIV and Hepatitis C in the

community setting, care of the underserved, immigrant health, and program development and evaluation. In addition to having a significant leadership role with HRHCare, Dr. Kerr continues to provide direct care for patients living with HIV and/or Hepatitis at FQHC service sites throughout the Hudson Valley.
Dr. Kerr also serves as the co-chair for the New York State Quality Advisory Committee for the Department of Health's AIDS Institute, is a co-chair of the Johns Hopkins-AIDS Institute Guidelines Committee for Treatment of Hepatitis C and serves on the Medical Care Criteria Committee.

Jacquelyn Kilmer
CEO, Harlem United Community AIDS Center, Inc.

Jacquelyn (Jacqui) Kilmer is the CEO of Harlem United Community AIDS Center, Inc., a nationally-recognized non-profit organization with a 30-year history of serving the underserved in Harlem and beyond. Harlem United provides quality community-centered healthcare and supportive housing for those experiencing homelessness, chronic physical and mental health conditions, suffering from substance use disorder and those living in circumstances of extreme poverty. Jacqui joined Harlem United in 2010, after returning to New York from Denver, Colorado. While in Denver, Jacqui was a partner in a large regional law firm and provided pro bono legal representation, lobbying and advocacy work for Colorado AIDS Project and a coalition of AIDS service and related organizations. Prior to being appointed CEO, Jacqui was Harlem United's Chief Operating Officer and Chief Compliance Officer. Jacqui holds a JD from the University of Denver College of Law, a BA in Economics and a MA in Political Science from Stony Brook University. Jacqui is a member of the NYS AIDS Advisory Council and served on the Mayor's Supportive Housing Task Force and Crisis Prevention and Response Task Force. Jacqui serves on the Board of Directors of Amida Care, New York's largest special needs managed care plan.

Charles King
CEO, Housing Works, Inc.

Charles King is one of the founders and the CEO of Housing Works, Inc. a community-based, not–for–profit organization that provides a full range of services including housing, health care, mental health, chemical dependency services, legal, advocacy, and job training and employment for homeless men, women, and children living with HIV/AIDS and other chronic conditions. Charles served on the governing body of UNAIDS as a member of the NGO Delegation to the PCB and was Co-chair of the NYS End of AIDS Task Force. Charles is currently the co-chair of the Ending the Epidemic Subcommittee of the NYS AIDS Advisory Council, co-chairs the ACT Now: End AIDS Coalition, a national ending the epidemic coalition, and co-chairs the Visioning Committee of the National AIDS Housing Coalition, which has now produced eight research and policy summits to generate research proving the efficacy of housing as an HIV intervention and turning that research into policy initiatives. Charles holds both a Law Degree and a Master of Divinity from Yale University, and is an ordained Baptist Minister.

Terry D. Leach, PharmD
Vice President of Pharmacy Services, Amida Care

Terry Leach, PharmD, serves as the Vice President of Pharmacy Services for Amida Care, a private, non-profit community health plan that specializes in providing comprehensive health coverage and coordinated care to Medicaid members with chronic conditions, including HIV/AIDS and behavioral health disorders, as well as people of transgender experience and people experiencing homelessness, regardless of HIV status. Dr. Leach is responsible for strategic, clinical and operational direction of the plan's pharmacy benefits. Dr. Leach directly oversees the Pharmacy Benefit Manager (PBM), the Preferred Drug List, Treatment Adherence, Utilization Management and the Hepatitis C Management Programs. Dr. Leach advocates for identification and treatment of individuals with Hepatitis C and presents nationally on health plan coverage, cost management and successful treatment of hepatitis C. Dr. Leach is also an Adjunct Assistant Professor, Social, Behavioral and Administrative Sciences at Touro College of Pharmacy. Dr. Leach received a Doctor of Pharmacy degree from Ohio Northern University and completed a residency at OhioHealth Riverside Methodist Hospital.

Ronni Marks
Founder, Hepatitis C Mentor and Support Group (HCMSG)

Ronni Marks has been working to raise awareness of Hepatitis C for over twenty years. Ronni's journey started as a patient when diagnosed in 1996, a time when there was little known about Hepatitis C. Ronni became a patient advocate, and the organizer and facilitator of a Hepatitis C support group at NYU Medical Center in NYC which lasted for eighteen years. Ronni worked with patients from the Interferon era through the DAA's. In 2011 Ronni founded the organization, The Hepatitis C Mentor and Support Group-HCMSG. After several unsuccessful attempts with other treatments, four years after being treated with the new DAA's, Ronni was told the HCV virus was no longer detected. This reinforced Ronni's mission to help ensure that everyone would have the same opportunities. HCMSG is an organization that addresses the lack of education and supportive services for people affected by Hepatitis C, and co-infected with HIV. It provides trainings for patients, healthcare providers, community-based service providers, and staff of hospitals, clinics and other organizations nationwide. Ronni serves on numerous advisory boards and the NYS steering committee for the elimination of Hepatitis C.

Denis Nash, PhD, MPH
Distinguished Professor of Epidemiology at the CUNY School of Public Health; Founding Executive Director of CUNY's Institute for Implementation Science in Population Health; Associate Director, Einstein-Rockefeller-CUNY Center for AIDS Research; Director, Implementation Science and Health Outcomes Core of the HIV Center for Clinical and Behavioral Studies at Columbia University

Denis Nash, PhD, MPH, is an epidemiologist with over 20 years of experience and leadership in conducting epidemiologic studies. Dr. Nash's central interests include infectious diseases, the field of public health surveillance and the use of public health surveillance data to conduct rigorous assessments of programmatic effectiveness and the impact of policies on health. Dr. Nash has worked extensively in domestic and international settings conducting large-scale, 'real-

world' epidemiologic studies examining key outcomes among persons with HIV infection. Dr. Nash is a Distinguished Professor of Epidemiology at the CUNY School of Public Health. Denis has worked at the forefront of the emerging field of implementation science and is the founding Executive Director of CUNY's new interdisciplinary Institute for Implementation Science in Population Health. Dr. Nash has published over 150 scientific articles on research primarily funded by the National Institutes of Health and the Centers for Disease Control and Prevention. Dr. Nash is the Associate Director of the Einstein-Rockefeller-CUNY Center for AIDS Research (CFAR) and Director of the Implementation Science and Health Outcomes Core of the HIV Center for Clinical and Behavioral Studies at Columbia University.

Dr. Nash also serves as a standing member on the National Institutes of Health study section review panels, led the development of New York's Ending the Epidemic Dashboard system, which tracks the progress of NYS's initiative to End New York's AIDS Epidemic by the end of 2020, teaches courses in Infectious Disease Epidemiology and Public Health Surveillance, and has mentored over 75 masters students, doctoral students, and post-doctoral fellows training in epidemiology, public health and implementation science.

Daniel Raymond
Deputy Director, Planning and Policy, Director, Harm Reduction Coalition

Daniel Raymond has worked in the field of harm reduction for over two and a half decades. Daniel joined Harm Reduction Coalition in 2003 and became Policy Director in 2005. Currently, Daniel serves as Harm Reduction Coalition's Deputy Director of Planning and Policy, and oversees the organization's policy, capacity-building, and overdose prevention departments. Daniel works with federal, state and local officials, advocates, and providers to expand critical drug user health interventions, including overdose education and naloxone distribution, syringe access programs, medication-assisted treatment, HIV and hepatitis C care and treatment, and quality health care for people who use drugs. Daniel has served as chair of the Injection Drug Users Health Alliance, the Washington Heights CORNER Project Board of Trustees, and the National Viral Hepatitis Roundtable Steering Committee. Daniel has also served on the NYS Heroin and Opioid Task Force, the Food and Drug Administration's Antiviral Drug Advisory Committee, the American Medical Association Physician Consortium for Performance Improvement Hepatitis C Workgroup, and the AASLD/IDSA Hepatitis C Guidance Panel.

Luis Scaccabarrozzi, MPH
Vice President and Senior Director of Health Policy and Advocacy, Latino Commission on AIDS

Luis Scaccabarrozzi, MPH, is originally from Peru. Luis started working in Public Health serving as a volunteer community educator and research recruiter for, Movimiento Homosexual de Lima, as the HIV epidemic began to impact gay/bisexual men and trans women in Peru. Luis also participated in public health campaigns related to Child Nutrition and Vaccination, Planned Parenthood and Sexual Health Education through the Public Health Department at Universidad Nacional Mayor de San Marcos. In the U.S., Luis has worked at community-based organizations in Chicago, New Jersey and New York, as well as having had the opportunity to work within health departments and private health centers. Currently, Daniel serves as Vice President and

Director of Health Policy & Advocacy at the Latino Commission on AIDS, leading the policy, communications and community mobilization initiatives at the city, state and federal level, and worked closely with initiatives related to Ending the AIDS Epidemic in NY by 2020 and Act Now: End AIDS Coalition. Luis also works on some of the Commission's social messaging, organizational development and research focused initiatives with Latino older adults living with HIV, U=U, PrEP, and Gay/Bi Men's related research.

Gloria Searson, ACSW
Founder, Coalition on Positive Health Empowerment (COPE)

Gloria Searson, ACSW, has over 25 years of professional experience working in the field of HIV and 20 years working in hepatitis C. Gloria was employed by a leading organization in treatment education, NATAP for 10 years. Gloria went on to work with all types of populations including women, MSM, the transgender community, and seniors. Gloria has worked as a treatment educator and Director of Treatment Education, as an advocacy relations manager, supervised an HIV clinic serving over 800 patients, and as Director of Community Health. Gloria formed COPE, the Coalition on Positive Health Empowerment, in 2010 after working as a supervisor at North General Hospital. Having obtained multiple perspectives in the field of HIV and HCV, Gloria is considered an expert in the field and has experience in public health, for profit business, and non-profit organizations.

Andrew Talal, MD, MPH
Professor of Medicine, University at Buffalo, State University of New York (SUNY)

Andrew Talal, MD, MPH, is a physician-scientist with more than 20 years' experience in hepatitis C virus (HCV), especially in disenfranchised populations, such as substance users. Dr. Talal is currently a Professor of Medicine at SUNY, University at Buffalo and has developed a translational liver research center and biorepository with funding from the Kaleida Health Foundation at the university. Furthermore, Dr. Talal is the principal investigator on a 5-year award from the Patient Centered Outcomes Research Institute to study telemedicine-based HCV treatment among patients on opiate agonist therapy. The study consists of 12 telemedicine sites across New York State conducting integrated treatment of HCV and opiate addiction disorder. Dr. Talal also conducts numerous industry-sponsored clinical drug trials that operate within the liver center. As a researcher Dr. Talal has published over 115 papers on topics such as HCV, telemedicine, drug metabolism and the social determinants of health. Dr. Talal's research also led to the development of liver fine needle aspiration as a diagnostic technique for liver sampling. Dr. Talal is committed to using emerging technology combined with a deeper understanding of the social determinants of health in the treatment of HCV and other conditions in disenfranchised populations.

Jeffrey J. Weiss, PhD, MS
Associate Professor of Medicine at the Icahn School of Medicine at Mount Sinai

Jeffrey J. Weiss, PhD, MS, is an Associate Professor of Medicine at the Icahn School of Medicine at Mount Sinai. Dr. Weiss is the Director of the *Respectful & Equitable Access to Comprehensive Healthcare* (REACH) Program in the Division of General Internal Medicine. REACH is a community

outreach and primary care-based harm reduction treatment program providing stigma-free care, including HCV treatment, to persons who use drugs. Dr. Weiss has worked for 25 years in the United States and Europe as a licensed clinical psychologist providing care to persons with infectious diseases; conducting research on behavioral interventions to improve their quality and length of life including strategies to improve medication and treatment adherence; and providing education and mentorship to medical providers and public health professionals. Dr. Weiss's NIH-funded research studies led to the development of the open-access, web-based Psychosocial Readiness Evaluation and Preparation for hepatitis C treatment (PREP-C) assessment tool which has been accessed by over 1800 health care professionals from around the world and shown to improve rates of HCV treatment initiation among HIV/HCV co-infected persons. Dr. Weiss's current research focuses on the intersection of HIV, HCV, and the opioid crisis and he serves as a co-Investigator on two HCV elimination studies in Kentucky.

Terri L. Wilder, MSW
Director of the HIV/HCV Center of Excellence at the Mount Sinai Institute for Advanced Medicine

Terri L. Wilder, MSW, is the Director of the HIV/HCV Center of Excellence at the Mt. Sinai Institute for Advanced Medicine in New York City. Funded by the New York State (NYS) Department of Health AIDS Institute, the Center has created HCV clinical education tools for medical providers across NYS, including an HCV testing clinical card, HCV testing law video, HCV and women of child-bearing age public service announcement, and HCV testing implementation action kit. In addition to creating clinical tools, the center convenes an annual HCV preceptorship and produces free HCV trainings, conferences, and webinars. In 2014 Terri served on the New York State Task Force to End AIDS and was recognized by POZ magazine in 2017.

Ann Winters, MD
Medical Director, Viral Hepatitis Program, New York City Department of Health and Mental Hygiene

Ann Winters, MD, is the Medical Director of the Viral Hepatitis Program at the New York City Department of Health and Mental Hygiene (NYCDOHMH). In this capacity Dr. Winters oversees viral hepatitis surveillance and applied research, policy and program development and implementation, program evaluation, provider training, community outreach and public awareness initiatives. Dr. Winters is responsible for updating and implementing the NYCDOHMH's Viral Hepatitis Strategic Plan, covering adult hepatitis B and all hepatitis C activities in coordination with both internal and external partners. Dr. Winters oversees viral hepatitis surveillance and capacity building initiatives, including development of new approaches to using surveillance data to measure patterns of care and impact of interventions and a current NYCDOHMH initiative to eliminate hepatitis C among people living with HIV. Dr. Winters received a Medical Degree from Columbia University College of Physicians and Surgeons and completed an Internal Medicine residency at Weill Cornell.

Ashely Zuppelli, PharmD

Director of Innovation Services, Trillium Health

Ashley Zuppelli, PharmD, received a PharmD from University at Buffalo, School of Pharmacy and completed a PGY-1 Pharmacy Practice residency at Erie County Medical Center in Buffalo, New York. Dr. Zuppelli is a credentialed pharmacist by the American Academy of HIV Medicine and is certified by the Board of Pharmacy Specialties in Ambulatory Care. Dr. Zuppelli is a core member of Monroe County Partnering to End the HIV Epidemic, also known as MCPEtE. Dr. Zuppelli is an Adjunct Professor of Pharmacy Practice at Wegman's School of Pharmacy at St. John Fisher College and serves as a preceptor for pharmacy students from St. John Fisher, University at Buffalo and D'Youville College. Dr. Zuppelli serves as the Director of Innovation Services at Trillium Health and oversees the Hepatitis C and Pre- and Post-Exposure Prophylaxis Programs. Dr. Zuppelli was recognized by Rochester Business Journal as a 2018 40 Under 40 honoree and is also certified in New York State to provide patient care through collaborative drug therapy management and administer immunizations.

APPENDIX B: NYS HEPATITIS C ELIMINATION TASK FORCE - WORKGROUP MEMBERS

Surveillance, Data and Metrics

Co-Chairs:
Denis Nash, PhD, City University of New York
Bruce Schackman, PhD, Weill Cornell

AIDS Institute Liaisons:
John Leung, Office of Program Evaluation and Research
Dhanushki Samaranayake, Office of Program Evaluation Research

Workgroup Members
Debra Blog, MD, MPH, New York State Department of Health, Division of Epidemiology
Angelica Bocour, MPH, New York City Department of Health and Mental Hygiene
Annette Gaudino, Treatment Action Group
David Holtgrave, PhD, State University of New York, School of Public Health
Charles King, Housing Works
Jane Leung, MS, RPh, Wellcare
Wendy Levey, New York State Department of Health, AIDS Institute
Angie Maxted, DVM, New York State Department of Health, Bureau Communicable Disease Control
Sarah Ravenhall, MHA, CHES, New York State Association of County Health Officials
Daniel Raymond, Harm Reduction Coalition
Barbara Rogler, New York State Department of Health, Office of Health Insurance Programs
Eli Rosenberg, PhD, State University of New York, School of Public Health
Mary Walawander, Erie County Health Department
Larissa Wilberschied, New York State Department of Health, AIDS Institute
Ann Winters, MD, New York City Department of Health and Mental Hygiene

Hepatitis C Prevention

Co-Chair:
Emma Fabian, MSW, Evergreen Health Services

AIDS Institute Liaison:
Meaghan Tartaglia, Bureau of HIV Ambulatory Care Services

Workgroup Members
Diana Aguglia, Alliance for Positive Health
John Barry, Southern Tier AIDS Program
Gail Brown, Coalition on Positive Health Empowerment
Gale Burstein, MD, MPH, Erie County Health Department

Allan Clear, New York State Department of Health, AIDS Institute
Chelsea D'Amato, New York City Department of Health and Mental Hygiene
Don Des Jarlais, PhD, New York University
Holly Hagan, PhD, New York University
Sander Koyfman, Wellcare
Pedro Mateau-Gelabert, PhD, City University of NY
Sharon Stancliff, MD, New York State Department of Health, AIDS Institute
Angela Woody, Washington Heights Corner Project/New York Harm Reduction Education

Hepatitis C Testing and Linkage to Care

Co-Chairs:
Ellie Carmody, MD, New York University Langone Health
Vinh Pham, MD, New York University Langone Health

AIDS Institute Liaison:
Janice Williams, Division of HIV, STD and HCV Prevention

Workgroup Members
Ray Ahmed, OraSure Technologies Inc.
Edward Anselm, MD, Emblem Health
Paul Bolter, American Liver Foundation
Marie Bresnahan, MPH, New York City Department of Health and Mental Hygiene
Raymond Ganoe, Evergreen Health Services
Nirah Johnson, LCSW, New York City Department of Health and Mental Hygiene
Chance Krempasky, NP, VOCAL-NY
Monica Parker, PhD, New York State Department of Health, Wadsworth Center
Liza Pereira, Evergreen Health Services
Cheryl Ralyea, FNP, Allegany County Sheriff's Office
Martha Ruiz, Harm Reduction Coalition
Beth Weir, RN, New York State Department of Health, AIDS Institute

Hepatitis C Care and Treatment Access

Co-Chairs:
Luis Freddy Molano, MD, Community Healthcare Network
Trang Vu, MD, Mount Sinai Health System

AIDS Institute Liaison:
Joseph Kerwin, Deputy Director, Medicaid Policy and Health Care Financing

Workgroup Members
Mary Angerame, NP, Jordan Health Center

David Bernstein, MD, Northwell Health
Eli Camhi, Generative resources
Douglas Fish, MD, New York State Department of Health, Office of Health Insurance Programs
Meital Fried-Almog, MPH, Community Health Care Association of New York State
Paul Gaglio, MD, FACP, New York and Presbyterian Hospital
Jacqueline Jacobi, Molina Healthcare
Micky Jimenez, Camino Nuevo
Terry Leach, PharmD, Amida Care
Nathan Levitt, NP, New York State Department of Health, AIDS Institute
Ronni Marks, Hepatitis C Mentor and Support Group, Inc.
Brianna Norton, DO, Montefiore Medical Center
Mary Olson, NP, New York University Langone Health
Russell Perry, MD, BronxCare Fulton Family Medicine Practice
Ponni Perumalswami, MD, Icahn School of Medicine at Mt. Sinai
Mike Selick, Harm Reduction Coalition
Sharon Stancliff, MD, New York State Department of Health, AIDS Institute
Andrew Talal, MD, MPH, University of Buffalo, Jacobs School of Medicine
James Tomarken, MD, MPH, MBA, MSW, Suffolk County Health Department
Reed Vreeland, Housing Works
Jeff Weiss, PhD, MS, Mount Sinai Health System
Terri L. Wilder, MSW, Mount Sinai Institute for Advanced Medicine
Ashley Zuppelli, PharmD, Trillium Health

Social Determinants

Co-Chairs:
Matt Scherer, MD, New York Presbyterian
Gloria Searson, ACSW, Coalition on Positive Health Empowerment

AIDS Institute Liaison:
Eden Solomon, Bureau of HIV Community Support Services

Workgroup Members
Matthew Akiyama, MD, Montefiore Medical Center
Jack Beck, Advocate for Incarcerated Individuals
Heidi Bramson, The Legal Aid Society
Wendy Colin, MVP Healthcare
Clifton Garmon, VOCAL-NY
Pete Hill, Native American Community Services of Erie and Niagara Counties, Inc.
Naomi Kabalkin, Hudson Valley Community Services
Jacquelyn Kilmer, Harlem United
Elissa Nolan, New York State Department of Health, AIDS Institute
Luis Scaccabarrozzi, Latino Commission on AIDS

Ginny Shubert, Housing Works
C. Virginia Fields, MSW, National Black Leadership Commission on AIDS

APPENDIX C: NYS HEPATITIS C ELIMINATION TASK FORCE - EX OFFICIO MEMBERS

Cate Bohn, MPH, Project Coordinator, New York State Council on Children and Families

Ann Marie Calabrese, Coordinator of Rehabilitative Services, New York State Office of Victims Services

Jason Chakot, Deputy Director of Administration, New York State Division of Veterans Affairs

Edward Cottrell, Employee Relations, New York State Governor's Office of Employee Relations

Eileen Franko, Director, New York State Department of Labor

Arlene González-Sánchez, MSW, LMSW, Commissioner, New York State Office of Addiction Services and Supports

Karen Hollowood, RN, BSN, MSEd, Associate in School Nursing, New York State Education Department

John Morley, Clinical Physician, New York State Department of Corrections and Community Supervision

Joseph Popcun, Deputy Commissioner, New York State Division of Criminal Justice Services

John Powell, Director, New York State Department of Financial Services

Ellen Tryon, Correctional Facility Specialist, New York State Commission of Correction

Frank Walsh, Chief Budget Examiner, New York State Division of the Budget

Gwen Wright, Executive Director, New York State Office for the Prevention of Domestic Violence