

2021 Guidance for Jurisdictional Hepatitis C Elimination Strategic Planning

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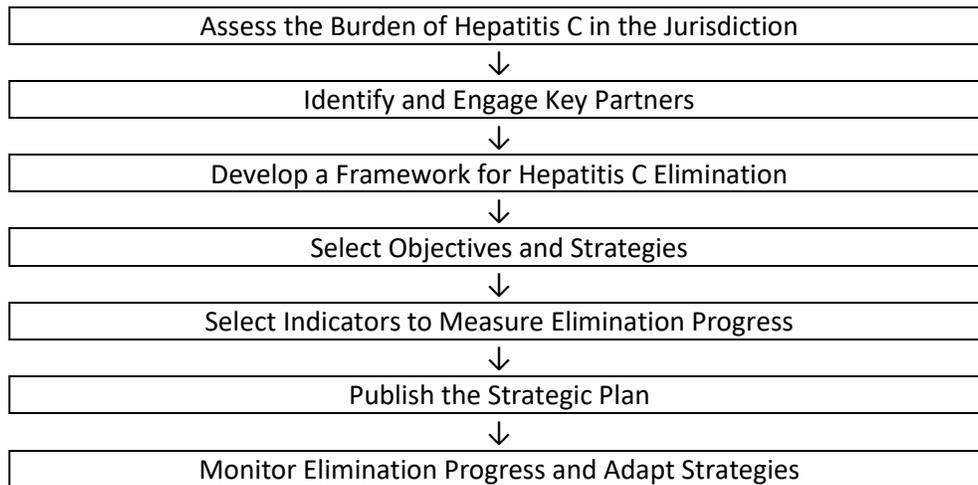
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National Center for HIV/AIDS, Viral
Hepatitis, STD, and TB Prevention

Executive Summary

Transmission of hepatitis C virus (HCV) is a reemerging public health threat driven by the opioid crisis and increases in injection drug use (IDU). The rate of estimated acute hepatitis C cases quadrupled from 2009 to 2018, with IDU being the most common risk behavior identified among cases with reported risk exposures. In response to this threat, some state and local jurisdictions have developed hepatitis elimination strategic plans. However, hepatitis elimination planning in all jurisdictions is needed to ensure meaningful and equitable progress in HCV elimination nationwide.

This guidance document is intended to aid state and local health departments in the development of strategic plans focused on the elimination of HCV as a public health threat in their jurisdiction. Key elements of strategic planning covered in this document include identifying and engaging partners; assessing the burden of hepatitis C; selecting HCV elimination goals, objectives, and strategies; and choosing indicators to measure progress (Figure 1). The framework for the strategic plan guidance mirrors the structure of the [Viral Hepatitis National Strategic Plan: A Roadmap to Elimination for the United States 2021–2025](#), but with an emphasis on HCV elimination. This document is not prescriptive, but rather presents a menu of approaches, strategies, and indicators that jurisdictions can consider when implementing their HCV elimination strategic plans.

Figure 1. Flow diagram of HCV elimination planning



Glossary of Abbreviations

DAA: Direct-acting antiviral

HAV: Hepatitis A virus

HBV: Hepatitis B virus

HCV: Hepatitis C virus

EHR: Electronic health record

IDU: Injection drug use

MAT: Medication-assisted treatment (for opioid use disorder)

MOUD: Medications for opioid use disorder

NHANES: National Health and Nutrition Examination Survey

NNDSS: National Notifiable Diseases Surveillance System

NVSS: National Vital Statistics System

POC: Point-of-care

PWID: People who inject drugs

PWUD: People who use drugs

SMART: Specific, measurable, achievable, realistic, and time-bound

SSP: Syringe service program

STI: Sexually transmitted infections

SUD: Substance use disorder

Section 1: Purpose of this Document

Recent advancements in hepatitis C virus (HCV) infection prevention, diagnosis, and treatment have made the prospect of eliminating HCV as a public health threat (HCV elimination) achievable. However, implementing these interventions at a scale large enough to reach HCV elimination will require increasing awareness of the possibility and challenges of HCV elimination; coalition building and coordination with key partners; developing a robust surveillance system to track progress and ensure equity; and financial commitment from local, state, and federal governments. Health departments play crucial roles in leading HCV elimination efforts, but it can be difficult to identify what activities to prioritize when facing limited resources and staff.

This document is intended to aid health department staff in formulating strategic plans for HCV elimination. For jurisdictions who are recipients of Integrated Viral Hepatitis Surveillance and Prevention Funding for Health Departments (CDC-RFA-PS21-2103), this document is intended to support the requirement of developing and releasing a jurisdictional viral hepatitis elimination plan. Note that while this document focuses on HCV elimination, it also identifies opportunities to integrate hepatitis A virus (HAV) and hepatitis B virus (HBV) prevention, diagnosis, and linkage to care activities into an HCV strategic elimination plan. Components of this guidance may be useful in developing a combined viral hepatitis elimination strategic plan and examples of combined plans can be found in the Appendix.

Section 2: Assessing the Burden of Hepatitis C in the Jurisdiction

Identifying Hepatitis C Virus Data Sources and Metrics

The first step towards developing an HCV elimination strategic plan is to understand the epidemiology of HCV within the jurisdiction. CDC conducts viral hepatitis surveillance through the National Notifiable Diseases Surveillance System (NNDSS) and National Vital Statistics System (NVSS). The annual viral hepatitis surveillance report includes a summary of cases of acute hepatitis C, perinatal hepatitis C, newly reported chronic hepatitis C cases, and deaths with hepatitis C listed as a contributing cause. The statistics reported through routine surveillance can be a starting point but may have limitations due to inconsistent reporting or data quality issues.

Other data sources can provide more information about the burden of hepatitis C in the jurisdiction. The National Health and Nutrition Examination Survey (NHANES) is an annual survey that is representative of the U.S. population and can generate state-level estimates of hepatitis C prevalence, awareness of hepatitis C status, and rates of hepatitis C viral clearance (i.e., HCV antibody positive, but HCV RNA undetectable from treatment cure or natural clearance). The online tool [HepVu](#) provides state-level estimates of hepatitis C prevalence using a combination of national data sources as well as county-level HCV-related mortality using data from NVSS. Health care utilization metrics including the utilization of hepatitis C treatment, cost of hepatitis C treatment, and cost of HCV-related complications may be available through state Medicaid or Healthcare Cost and Utilization Project data (data use agreements may be required depending on jurisdiction). Specific subpopulation data may also be available through correctional facility databases, state disease registries such as cancer registries and behavioral health databases, electronic health record (EHR) data, or health care claims data. Finally, serosurveys and research studies in the jurisdiction may provide granular epidemiologic, health care utilization, behavioral, or treatment and viral clearance data in specific settings or populations.

Understanding the epidemiology of hepatitis C in the jurisdiction is useful for identifying areas to focus elimination efforts. Each jurisdiction is encouraged to identify its own key data measures. Examples of data measures, potential data sources, and considerations in developing these measures is included in the table below.

Table 1. Examples of hepatitis C data measures and potential data sources

Hepatitis C Data Measure	Potential Data Sources	Considerations
Primary Outcomes		
Hepatitis C Incidence (Acute Hepatitis C*)	Surveillance data [†] Cohort studies	Numerator: Reported acute cases of hepatitis C Denominator: Number of people in jurisdiction.
HCV-related Mortality	Vital statistics [¶]	Numerator: Reported or estimated HCV-related deaths Denominator: Number of people in jurisdiction
Proxy Measures		
Hepatitis C Viral Clearance	Surveillance data [§] National surveys Health systems data	Numerator: Number of people with undetectable HCV RNA on most recent test Denominator: Number people ever tested for HCV RNA in a given time period
Hepatitis C Prevalence	Surveillance data [§] National surveys Health systems data	Numerator: Number of people with detectable HCV RNA in a given time period Denominator: Number of people in a jurisdiction or group in a given time period
Programmatic Targets		
% Diagnosed (of people living with hepatitis C)	Surveillance data [§] National surveys	Numerator: Number of people with detectable HCV RNA Denominator: Estimated number of people with hepatitis C in a given time period

% Treated (of those diagnosed with hepatitis C)	Surveillance data [§] Prescription data	Numerator: Number of people with hepatitis C treated Denominator: Number of people with detectable HCV RNA in a given time period
Syringes/needles per PWID per year	SSP data Survey data	Numerator: Number of syringes/needles distributed Denominator: Number of PWID in a jurisdiction

* Acute cases of hepatitis C are used to estimate hepatitis C incidence. However, since cases of acute hepatitis C are underdiagnosed and underreported, a multiplier is applied to estimate the total number of acute cases of hepatitis C nationwide as reported in the annual CDC Viral Hepatitis Surveillance Report:

<https://www.cdc.gov/hepatitis/statistics/2018surveillance/index.htm>. Newly diagnosed chronic hepatitis C cases may also approximate incidence but may be more influenced by changes in testing than acute cases of hepatitis C.

† National Notifiable Diseases Surveillance System (NNDSS) data on acute hepatitis C cases can be accessed at CDC Wonder: https://wonder.cdc.gov/nndss/nndss_annual_tables_menu.asp

¶ National Vital Statistics System (NVSS) death data can be accessed at CDC Wonder: <https://wonder.cdc.gov/>

§ Hepatitis C viral clearance cascade surveillance data may be laboratory or EHR-based and approximate the sequence of hepatitis C care including HCV antibody screening, HCV RNA testing, linkage to care, initiating treatment, and documenting cure with sustained virologic response 12 weeks after completion of treatment. Additional details of the laboratory-based hepatitis C viral clearance cascade can be found at:

<https://www.cdc.gov/hepatitis/statistics/GuidelinesAndForms.htm>

Describing Disease Burden Trends, Key Populations, and Disparities

Many jurisdictions have developed their hepatitis C epidemiologic profile using surveillance data as well as other data sources. The epidemiologic profiles of some states are publicly available at: <https://www.astho.org/Viral-Hepatitis-Epi-Profiles/>. Additional guidance on hepatitis C surveillance can be found at:

<https://www.cdc.gov/hepatitis/statistics/GuidelinesAndForms.htm>

Jurisdictions can use these data to understand the overall trajectory of HCV transmission, identify disparities, and prioritize key populations for enhanced prevention, diagnosis, linkage, and treatment. Disparities among key populations can highlight the effect of social determinants of health, racism, stigma, and discrimination in perpetuating inequities. Disparities revealed in hepatitis C viral clearance cascade data can be especially useful in prioritizing interventions as a part of HCV elimination planning. Interventions in the populations most affected can have the greatest population health impact and promote health equity.

For jurisdictions who have not developed their hepatitis C epidemiologic profile, potential key populations may include:

- Demographic characteristics: Generational cohorts, racial or ethnic minorities, sexual orientation or gender identity minorities, American Indian/Alaska Native tribal populations
- Coexisting conditions: People with HIV or chronic hepatitis B, people who are pregnant
- Risk exposures: PWUD/PWID, incarcerated or detained people, people experiencing homelessness, people who undergo maintenance hemodialysis
- Geographic: People in select rural communities, people residing in high social vulnerability index areas, areas with high rates of overdose
- Health system or coverage characteristics: Uninsured patients, patients on Medicaid

Section 3: Identifying and Engaging Key Partners

Identifying Key Partners

Achieving HCV elimination requires a coordinated approach involving multiple partners that interface with people at risk for or with hepatitis C. Partnering with a diverse group of partners can identify complementary activities to promote synergy among partners and ensure coordination of elimination activities within the jurisdiction. Partners may be either internal or external to the jurisdiction.

Key internal partners may include:

- Hepatitis A and hepatitis B surveillance or prevention programs
- HIV and sexually transmitted infections surveillance and prevention programs
- Communicable infectious disease surveillance and prevention programs
- Health department run syringe service programs
- Department of Corrections
- Immunization programs
- Public health emergency preparedness and response programs
- Substance use disorder and mental health programs
- Health care-associated infection surveillance and prevention programs
- Cancer surveillance and prevention programs
- Overdose prevention surveillance and prevention programs
- Vital statistics programs
- State Medicaid programs
- Public health laboratories
- Maternal and child health programs

Key external partners that care for people at risk for or with hepatitis C may include:

People at risk for hepatitis C or with lived experience: Representation from people whom HCV elimination activities impact is crucial to ensure that activities are tailored to the health literacy of the focus population, non-stigmatizing, and culturally appropriate. Lived experience can be past or present hepatitis C or SUD. Note that involvement of people with lived experience in hepatitis elimination planning is a requirement of the PS21-2103 fund recipients.

Syringe service programs (SSPs) and other harm reduction programs: SSPs can provide sterile injection equipment, injection equipment disposal, naloxone training and distribution, linkage to substance use disorder (SUD) treatment, infectious diseases screening and linkage to treatment, and other screening, prevention, and treatment services for people who inject drugs (PWID). Oftentimes SSPs are the only point of contact with the public health system for certain PWID, making SSPs a key partner in HCV elimination.

Substance use disorder (SUD) treatment facilities: SUD treatment providers offer withdrawal management, counseling and behavioral therapy, and/or medication-assisted treatment (MAT) for people who use drugs (PWUD). SUD treatment facilities can offer infectious diseases screening and linkage to treatment as well as other prevention services.

Correctional and detention facilities: A large proportion of people at risk for or with hepatitis C pass through or reside in state prisons, local jails, and other correctional or detention facilities. Infectious diseases screening and treatment in these settings can effectively reach certain populations who do not otherwise have a connection with public health or the health care system.

Health care systems: Hospitals and affiliated clinics that care for PWUD frequently manage conditions associated with drug use (e.g., overdose, invasive bacterial or fungal infections, and skin and soft tissue infections). Emergency

departments can provide infectious disease screening and linkage to treatment. Affiliated clinics can provide primary and specialty care that include infectious disease prevention, screening, and treatment services.

Community health centers: Community health centers such as federally qualified health centers provide integrated primary care and public health services to low-income and uninsured patients and are key partners in infectious diseases prevention, screening, and treatment. Community health centers provide care to key populations including racial and ethnic minorities, people experiencing homelessness, immigrants, and uninsured patients.

Additional external partners may include:

- Community-based organizations
- Local health departments
- Local government leaders
- Tribal health boards/councils
- Social service providers
- Law enforcement groups
- Groups offering legal counsel
- Emergency medical services
- Dental clinics
- Medical and other professional societies
- Primary care providers
- Mental health providers
- Sexual health and family planning clinics
- Ryan White programs
- AIDS Education and Training Centers
- Academia and research organizations
- Health insurance providers
- Commercial pharmacies
- Diagnostic laboratories
- Existing community advisory boards
- Community and faith-based organizations
- Local businesses

Engaging Key Partners

The first step in HCV elimination planning is to engage internal partners. The approach to organizing internal partners will vary by jurisdiction. Obtaining buy-in from jurisdictional leadership such as the state epidemiologist for communicable diseases can facilitate introductions to partners across health department programs and project support for HCV elimination planning. A key element to obtaining buy-in is to convey a sense of urgency around rising new HCV infection, the present opportunity to achieve HCV elimination, and the need for bold and aspirational leadership and collaboration to achieve it. Without a sense of urgency, need for change and interest in HCV elimination, partners may find it difficult to prioritize HCV elimination planning over other competing needs. Be sure to solicit partners' thoughts about how they can support HCV elimination in addition to identifying how they can support HCV elimination planning. Once internal buy-in for HCV elimination planning is obtained, the focus can then shift to outreach to external partners.

Given the large number of external partners with diverse perspectives and interests, formally organizing internal and external partners into a coalition or technical advisory committee is essential to developing strategic direction, building consensus and support for elimination activities, and providing accountability. Note that forming a hepatitis elimination coalition or technical advisory committee is a requirement of PS21-2103 funded recipients. A hepatitis elimination coalition is generally a broader network of partners organized around a collective impact model. In this arrangement, multiple partners contribute to and have joint ownership of an HCV elimination plan and are supported by a backbone organization, usually the health department, to guide the development of the strategies, alignment, and coordination of

the plan's implementation. In contrast, a technical advisory committee entails partners advising the health department but not necessarily having decision-making power or direct ownership of the final plan. Both hepatitis elimination planning structures are valid, and the optimal structure will depend on the partners present in each jurisdiction and existing relationships.

Some jurisdictions may have pre-existing coalitions focused on viral hepatitis or the broader SUD, HIV, viral hepatitis, and sexually transmitted infections (STIs) syndemic. If the scope of the existing coalition overlaps with jurisdictional goals for hepatitis elimination planning, jurisdictions may consider establishing a hepatitis elimination planning sub-group from the existing coalition. Care should be taken to ensure adequate representation of key partners across the jurisdiction and include people with viral hepatitis lived experience.

Examples of jurisdictional coalitions include:

- Hep Free Hawaii: <https://www.hepfreehawaii.org/>
- Hep Free PA: <https://www.communityliveralliance.org/hep-free-pa>
- Hep C Free Allegheny County: <https://www.hepcfreesallegheny.org/>
- Hep Free NYC: <https://hepfree.nyc/>
- End Hep C SF: <https://endhepcsf.org/>

The coalition or technical advisory committee can facilitate input from partners to inform elimination planning and promote health equity by ensuring that the voices of affected groups are represented. When identifying and engaging partners, it is crucial to ensure representation of partners with broad expertise including technical skills, knowledge in health disparities, and close connections with the affected community. Members can form goal-specific working groups to support the development of HCV elimination objectives and strategies. Members may also inform the prioritization of key activities supporting specific strategies that are likely to have the most impact in the community. HCV elimination coalitions or technical advisory committees can also align partner HCV elimination resources and activities with broader public health activities addressing the broader syndemic to ensure synergy and prevent duplication of actions. Partners may find opportunities to share data or resources to inform or strengthen elimination activities. Finally, this coalition or technical advisory committee can provide ongoing feedback on HCV elimination activity implementation, monitoring and evaluation, and adaptation to meet HCV elimination targets.

While there is no uniform way to conduct the engagement process, steps to consider in developing a comprehensive engagement process include:

- Identifying a group of key partners and stakeholders
- Developing and share roles and responsibilities for the health department, group members, and leaders of the groups
- Establishing how the group will convene and share information
- Establishing a shared vision, values statement, agreement, or charter for the group
- Creating working groups to accomplish tasks in elimination planning
- Monitoring progress in HCV elimination
- Reviewing and updating strategies with input from key partners and the community

When identifying which partners to engage in elimination planning, a power-interest grid may help prioritize outreach to potential partners and degree of engagement in HCV elimination planning (**Figure 2**). Partners with higher interest and higher power in advancing HCV elimination are priority partners for engagement who are more likely to be actively engaged in the planning process. Partners with lower interest but higher power are important partners to engage and satisfy since they could be a barrier to the development or implementation of an elimination plan. Although partners with higher interest but lower power may not be able to directly influence elimination planning or implementation, they can share their expertise, identify potential challenges, and serve as supporters of elimination planning. For instance, people at risk for hepatitis C or with lived experience may have lower power in implementing HCV elimination activities, but their high interest can help them identify implementation challenges, improve the acceptability of interventions, and

become champions of elimination activities. Finally, partners with lower interest and power can be monitored and provided general updates on elimination planning.

Figure 2. Power/Interest Grid

Higher Power	<u>Keep Satisfied</u>	<u>Priority Engagement</u>
	<ul style="list-style-type: none"> • Consult to ensure concurrence with project • Increase interest in project as able 	<ul style="list-style-type: none"> • Involve in project and decisions • Engage on a regular basis to maintain relationship
Lower Power	<u>Lower Priority</u>	<u>Keep Informed</u>
	<ul style="list-style-type: none"> • Communicate general updates • Increase interest in project as able 	<ul style="list-style-type: none"> • Consult on areas of interest • Recruit as project ambassadors
	Lower Interest	Higher Interest

When approaching partners to serve on an elimination technical advisory committee, it is important to highlight why their expertise and perspective would be valuable, communicate the expected degree of engagement and anticipated time commitment, and provide the opportunity to name alternative individuals or groups that could serve if the approached partner is unavailable.

Jurisdictions may find that a smaller group of core partners can effectively lead HCV elimination planning while also soliciting input from a broader network of partners that want to be involved but may not have the capacity for a high degree of engagement. Jurisdictions should focus on identifying individuals who will actively contribute and be invested in the process. Strategies to increase partners' sense of ownership of the process include ensuring that participation shapes policy, respecting all members' diverse perspectives, and offering public recognition of members' contributions.

HCV elimination planning has many parallels with HIV elimination planning and additional guidance on partner engagement can be found in the CDC guidance on HIV planning: <https://www.cdc.gov/hiv/pdf/p/cdc-hiv-planning-guidance.pdf>. Additional general guidance on creating and maintaining coalitions and partners can be found in an online toolkit from the University of Kansas: <https://ctb.ku.edu/en/creating-and-maintaining-coalitions-and-partnerships>.

Section 4: Developing a Framework for Hepatitis C Elimination

Identifying Key Elements of a Strategic Plan

Use of a standard framework for conceptualizing HCV elimination activities can promote the systematic review of all potential elimination activities, inform the prioritization of interventions, and unify partners behind a common set of goals, objectives, and strategies. The [Viral Hepatitis National Strategic Plan](#) uses a vision, goal, objective, and strategies framework (**Table 2**).

Table 2. Key Elements of a Strategic Plan

	Description	Example
Vision	A vision is the big picture, desired future that is achieved as a result of the plan.	A world without hepatitis C
Goals	Goals are broad aspirations that enable a plan's vision to be realized.	Prevent new HCV infections
Objectives	Objectives are the changes, outcomes, or impact a plan is trying to achieve.	Increase hepatitis C prevention and treatment services for PWUD
Strategies	Strategies are approaches used to accomplish an objective.	Increase utilization of SSPs among PWID
Indicators	Timebound metrics used to assess whether a goal was achieved.	Reduce new HCV infections by 90% from 2017 to 2030

A vision statement broadly reflects the desired future and is aspirational in nature. A values statement can accompany the vision statement and be helpful in reflecting an inclusive and non-stigmatizing message of collaboration towards achieving HCV elimination. Goals are the broad aspirations that indicate how the vision will be achieved. Objectives are the changes, outcomes, or impacts that must be achieved to reach a stated goal. Strategies are the approaches that an organization and partners will use to achieve a specific objective. There are usually multiple strategies per objective, objectives per goal, and goals per vision. Indicators are metrics used to determine whether chosen objectives and strategies have been successful in achieving a goal.

Developing an Elimination Plan Using the National Strategic Plan Framework as a Guide

Jurisdictions are encouraged to review the goals and objectives outlined in the [Viral Hepatitis National Strategic Plan](#) and incorporate them into jurisdiction-level elimination planning where appropriate. Jurisdictions may choose to align their goals and objectives with the Viral Hepatitis National Strategic Plan for ease of organizing elimination planning. However, jurisdictions should develop strategies that are specific to their population and setting that can be practically implemented over the timeframe of the HCV elimination plan.

The Viral Hepatitis National Strategic Plan consists of 5 goals in pursuit of the vision that the United States will be a place where new viral hepatitis infections are prevented, every person knows their infection status, and every person with viral hepatitis has high-quality health care and treatment and lives free from stigma and discrimination. This vision includes all people, regardless of age, sex, gender identity, sexual orientation, race, ethnicity, religion, disability, geographic location, or socioeconomic circumstance.

The 5 goals in the Viral Hepatitis National Strategic Plan are:

- Goal 1: Prevent New Viral Hepatitis Infections
- Goal 2: Improve Viral Hepatitis–Related Health Outcomes of People with Viral Hepatitis
- Goal 3: Reduce Viral Hepatitis–Related Disparities and Health Inequities
- Goal 4: Improve Viral Hepatitis Surveillance and Data Usage
- Goal 5: Achieve Integrated, Coordinated Efforts That Address the Viral Hepatitis Epidemics among All Partners

Each goal has 3–5 objectives that advance the respective overall goal and each objective has strategies that serve to accomplish the objective. The goals and objectives largely align with the goals and objectives that would be relevant to jurisdictional HCV elimination planning. Therefore, jurisdictions should consider using the same goals and objectives established in the National Strategic Plan. Previously developed jurisdictional hepatitis elimination plans can be found in the Appendix.

In the subsequent section, each of the 5 goals and corresponding objectives are reviewed and a menu of strategies are offered for consideration by jurisdictions. Jurisdictions do not need to include every corresponding objective and strategy of the 5 goals in their HCV elimination plans but are encouraged to consider them broadly. Selecting a limited set of objectives and strategies can help to prioritize the most impactful strategies.

Section 5: Selecting Objectives and Strategies

A variety of approaches can be taken to select the objectives and strategies for an HCV elimination strategic plan. This section provides a menu of strategies organized by the goals and objectives found in the [Viral Hepatitis National Strategic Plan](#). The goals, objectives, and strategies have been slightly modified to focus on HCV elimination. Adapting objectives and strategies from related jurisdictional strategic plans such as HIV elimination, immunization, and cancer control plans may also be helpful.

Jurisdictions may consider forming working groups comprised of members of the elimination coalition or technical advisory committee that develop the objectives and strategies for a specific goal. Each working group can be tasked with identifying the current gaps in HCV elimination pertaining to their assigned goal, selecting appropriate objectives and strategies that address these gaps, and prioritizing the strategies that would be most impactful. Working groups can then report back to the coalition or technical advisory committee and work to gain consensus on the strategies and synthesize them into a full HCV elimination strategic plan. Finally, the coalition or technical advisory committee can also support the development of a list of prioritized key activities supporting each strategy. Key activities can be dynamic and routinely updated on an annual basis.

Goals and accompanying objectives are described below along with a menu of potential strategies that jurisdictions may choose to modify and adopt in their strategic plans. Since funding, staff, and capacity for HCV elimination are limited, jurisdictions are encouraged to focus on fewer objectives and strategies.

HCV elimination planning efforts should be guided by consideration of:

- Cost and effectiveness
- Feasibility of full-scale implementation
- Ability to reach key populations
- Areas of synergy or conflict between different strategies
- Prevent duplication of effort and leverage existing resources
- Emphasis on interventions that will have the greatest overall potential to reduce HCV infections or deaths

Goal 1: Prevent New HCV Infections

HCV infection rates have steadily increased over the past decade driven by the substance use disorder crisis, increases in injection drug use, and sharing of injection equipment. HCV infections can be prevented through increasing hepatitis C awareness, preventing perinatal HCV transmission, improving hepatitis C prevention and treatment services for PWID, and increasing the capacity of public health and health care systems to prevent and manage hepatitis C.

Objective 1.1: Increase awareness of hepatitis C

Campaigns to increase hepatitis C awareness can be oriented towards the public, people at high risk for HCV infection, and people with hepatitis C. Messages directed to the general public can raise awareness of the rise in new HCV infections and hepatitis C prevention, testing, and treatment. Increased hepatitis C awareness among people at risk for HCV infection can promote reductions in risk behaviors and increased utilization of testing and preventive services. Finally, increased hepatitis C awareness among people with hepatitis C can prevent HCV transmission to their contacts and improve treatment completion rates.

<i>Objective 1.1 Sample Strategies</i>
Utilize or adapt national campaign material for local use, such as CDC’s Know More Hepatitis campaign (https://www.cdc.gov/knowmorehepatitis/index.htm)
Develop public health messaging oriented to the public, people at risk of HCV infection, and people with hepatitis C to increase awareness of hepatitis C risk factors, prevention, testing, and treatment.
Integrate messaging on HIV, viral hepatitis, STIs, and overdoses to raise awareness of the overlapping syndemic driven by substance use disorder.
Disseminate hepatitis C prevention, testing, and treatment messages to PWID and providers serving PWID.
Implement state and local campaigns to disseminate information on hepatitis C risk factors, prevention, testing, and treatment through traditional and social media outlets.
Partner with community groups to provide education about hepatitis C and share personal stories at community locations, in the media, and other settings that reach disproportionately impacted communities.
Support patients cured of hepatitis C to become community champions of hepatitis C prevention, diagnosis, and treatment.

Objective 1.2: Increase viral hepatitis vaccination uptake

There is currently no FDA-approved hepatitis C vaccine. However, HCV elimination activities can reach populations at risk for hepatitis A and hepatitis B, both of which are vaccine preventable, such as PWUD, people currently or formerly incarcerated or detained, and people experiencing homelessness or unstable housing. Therefore, jurisdictions should integrate hepatitis A and hepatitis B vaccination efforts into HCV elimination activities.

<i>Objective 1.2 Sample Strategies</i>
Integrate hepatitis A and hepatitis B vaccination in harm reduction activities among PWUD and other adults at risk for or living with hepatitis C
Integrate hepatitis C prevention activities in HAV outbreak response and vaccination plans

Objective 1.3: Eliminate perinatal transmission of HCV

Treatment as prevention is an important approach to reducing HCV transmission including perinatal HCV transmission. CDC recommends [HCV screening](#) for all adults once in their lifetimes and HCV screening for all pregnant people during each pregnancy (except in settings where the prevalence of HCV RNA-positivity is less than 0.1%). Since HCV DAAs are not approved for use during pregnancy, pregnant people with hepatitis C should be linked to care for hepatitis C treatment after their pregnancy.

<i>Objective 1.3 Sample Strategies</i>
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Collaborate with community organizations that serve disproportionately impacted populations to educate staff and people of childbearing potential about viral hepatitis and the importance of preventing hepatitis transmission to infants.
Increase access to reproductive care and long-acting reversible contraceptives for people at high risk for HCV infection.
Partner with health care providers, health care systems, and professional organizations to increase the implementation of HCV screening and management during pregnancy and linkage to care for treatment after pregnancy.
Prioritize social service systems and community organizations support to remove barriers to treatment for people of childbearing potential.
Identify children born to persons with hepatitis C for follow up testing at 18 months and referral to care.

Objective 1.4: Increase hepatitis C prevention and treatment services for people who use drugs

New HCV infections and reinfections in the United States are primarily driven by injection drug use (IDU). Preventing HCV acquisition and transmission among PWID might require expanded access to SUD treatment, SSPs, and integrated prevention testing and harm reduction services in settings serving PWID. Increasing access to MAT and medications for opioid use disorder (MOUD) is a highly effective hepatitis C prevention tool. The integration of these and other prevention services has been referred to as a PWID Service Bundle (**Table 3**). Increasing the ability of public health, health care systems, and community partners to deliver integrated PWID Service Bundle services increases the uptake of these interventions and prevents new HCV infections.

Table 3. Prevention and harm reduction components of a comprehensive service bundle for people who inject drugs

PWID Service Bundle
Needs-based provision of sterile injection equipment in sufficient supply for all injections
Accessible disposal of used injection paraphernalia
Naloxone provision and training
Substance use disorder screening and referral to treatment
Screening and linkage to treatment for infectious diseases such as HCV, HBV, HIV, sexually transmitted infections
Vaccination for hepatitis A and hepatitis B
Condom distribution
Pre-exposure prophylaxis (PrEP) for HIV
Patient-centered reproductive health care, including access to long-acting reversible contraceptives

<i>Objective 1.4 Sample Strategies</i>
Disseminate guidance to PWID on safe injection practices, harm reduction, SUD treatment, HCV testing and treatment, and how to enroll in insurance, patient assistance programs, and social services.
Improve HCV screening, linkage to care, and treatment for PWID in a broad range of health care and community settings.
Support a favorable legal environment allowing SSP to operate by obtaining a Determination of Need from CDC (if not already done). Whenever possible, encourage relaxation of state and local laws restricting SSPs.
Expand access to harm reduction and sterile injection equipment through increased funding and support of SSPs.
Expand access to SUD treatment through improving SUD referral networks, reducing restrictions on SUD treatment providers, and expanding Medicaid coverage for MOUD.
Improve referral to SSPs, SUD screening, MOUD initiation, and linkage to SUD treatment providers for PWID being released from correctional or detention facilities.

Support the integration of the PWID Service Bundle across health care, SSP, SUD treatment, and correctional settings.
Increase staffing and training of peer support counselors to support PWID and provide culturally and linguistically appropriate navigation hepatitis C care and social services.
Identify and scale up best practices for harm reduction and hepatitis C prevention across health care, SSP, SUD treatment, and correctional settings.
Support innovative harm reduction and prevention service delivery modalities for PWID including mail order, mobile, and telehealth approaches.

Objective 1.5: Increase the capacity of public health, health care systems, and the health workforce to prevent and manage hepatitis C

Increased capacity of public health and health care providers to address opioid use disorder and prevent and manage new HCV infections is crucial to reduce new HCV infections. Improving safer opioid-prescribing practices can reduce the number of people who develop an opioid use disorder. Capacity to prevent and manage hepatitis C can be increased through linking health care providers with existing resources; supporting clinical networks to share information among providers; and offering technical assistance to providers seeking to implement hepatitis C prevention, testing, and treatment.

<i>Objective 1.5 Sample Strategies</i>
Partner with the state opioid treatment authority and overdose prevention program to increase medical and dental provider education on pain management and safer opioid-prescribing practices using the CDC Guideline for Prescribing Opioids for Chronic Pain and other related resources.
Link health care providers to existing trainings, support tools, and resources on harm reduction, SUD treatment, use of MOUD, and HCV testing and treatment.
Develop clinic networks for health care providers to disseminate hepatitis C prevention, testing, and especially treatment skills across primary care, SSP, correctional, and SUD treatment settings.
Provide technical assistance to health care providers to support the implementation of hepatitis C prevention, screening, and treatment in primary care, SSP, correctional, and SUD treatment settings.

Goal 2: Improve HCV–Related Health Outcomes of People with Hepatitis C

Left untreated, HCV infection can progress over many years to liver fibrosis, cirrhosis, and death. However, recent advances in treatment with HCV DAAs has resulted in cure rates of >90% for patients regardless of genotype, presence of cirrhosis, and prior treatment with interferon-based regimens. People with hepatitis C progress through a hepatitis C care cascade to reach HCV elimination targets. The hepatitis C care cascade typically includes HCV antibody screening, HCV RNA testing, linkage to hepatitis C care, initiating treatment with DAAs, and documenting cure with an undetectable HCV RNA test at 12 weeks after completion of treatment. Unfortunately, 4 in 10 people with hepatitis C in the United States are unaware of their status. People who are infected with HCV can be lost at various points in the care cascade. Efforts are needed to remove barriers to early diagnosis and treatment as well as increase the capacity of public health and health care systems to diagnose and treat hepatitis C. Finally, adoption of new diagnostics and simplified treatment protocols are needed to promote decentralization of hepatitis C care.

Objective 2.1: Increase the proportion of people who are tested and aware of their hepatitis C status

CDC recommends [HCV screening](#) for all adults once in their lifetimes and HCV screening and routine periodic screening for people with ongoing risk factors, such as IDU, while risk factors persist. Early diagnosis and treatment for people with hepatitis C are essential to reduce liver disease and HCV-related mortality. Screening for HCV with HCV antibody testing should be expanded in both clinical and community-based settings to facilitate early treatment and prevention of HCV transmission. Screening at clinical sites can include primary care, sexual health clinics, emergency departments, pharmacies, and public health clinics. Community screening sites may include SSPs, SUD treatment centers, correctional facilities, homeless shelters/encampments, community-based organizations, and mobile testing units. Some clinical and community screening sites might not have the capacity for HCV RNA testing. Understanding each site’s capacity to provide HCV antibody screening, RNA testing, and referral to hepatitis C treatment can help identify practical strategies and focus areas for improvement.

<i>Objective 2.1 Sample Strategies</i>
Scale up implementation of universal HCV screening guidelines among all adults and pregnant people and provide linkage to care in a range of clinical and nonclinical settings including homeless shelters and mobile clinics.
Confirm that HCV antibody reflex to HCV RNA testing is the standard procedure in commercial and hospital-based laboratories.
Implement electronic health records automated universal HCV screening reminders or prompts in emergency departments and primary care.
Implement recurring HCV testing among PWID enrolled at SSPs to capture new infections and cases of reinfection.
Implement universal opt-out HCV screening at entry to and release from correctional and detention facilities.
Integrate HCV intake testing at SUD treatment programs.
Partner with community-based organization to conduct testing outreach to key populations.
Use innovative strategies such as incentives-based testing of partners to expand testing within injection or sexual networks.

Objective 2.2: Improve the quality of care and increase the number of people with hepatitis C who receive and complete treatment, including people who use drugs and people in correctional settings

People diagnosed with hepatitis C must find a way to cover the costs of hepatitis C care and receive the financial and social support to access hepatitis C treatment providers, complete treatment, and receive treatment for co-existing medical conditions. A large proportion of people with hepatitis C are also people with current or lived experience of drug use who may access SSP, SUD treatment, or may have experienced incarceration at correctional or detention facilities. Therefore, scaling-up effective models of linkage to care, hepatitis C treatment colocation, or provision of hepatitis C care virtually may be needed to increase the number of people treated for hepatitis C.

Despite recent reductions in the cost of HCV direct-acting antivirals (DAAs), the price of DAAs remains high, making access to DAAs dependent on having commercial insurance, Medicaid/Medicare, or receiving assistance from drug assistance programs. The 340B Drug Pricing Program allows health systems that care for medically underserved populations to purchase medications in bulk at a discount. Organizations might partner with 340B-eligible systems to expand treatment capacity. Finally, a few states have directly negotiated with pharmaceutical manufacturers to obtain hepatitis C treatment medications at reduced prices to increase hepatitis C treatment access.

<i>Objective 2.2 Sample Strategies</i>
Train linkage to care navigators to connect people diagnosed with hepatitis C from a variety to clinical and nonclinical settings to hepatitis C treatment providers, other medical providers, and social services.
Implement innovative approaches to engage people in care and re-engage those who are lost to care, such as data to care collaborations that include patient navigation.
Implement colocation of HCV diagnostic and treatment capacity at SSPs, SUD treatment, correctional and detention, and homeless service facilities. Consider mobile test and treat programs as well.
Promote simplified test-and-treat protocols that require fewer patient visits at SSP, SUD treatment, and correctional facilities.
Establish standard nurse-driven protocols to manage the diagnostic work-up and follow-up for hepatitis C treatment.
Establish a supportive specialist network to assist in the management of complex patients undergoing hepatitis C treatment.
Eliminate prior-authorization requirements for hepatitis C treatment and remove Medicaid fibrosis, sobriety, and provider type restrictions.
Implement 340B programs or third-party partnerships in correctional and detention facilities to reduce the cost of hepatitis C treatment.
Negotiate a direct contract with a pharmaceutical manufacturer to access pan-genotypic DAAs through a subscription or other low-cost model.
Expand scope of practice for NP, PA, PharmDs and ensure third-party payer reimbursement for hepatitis C care.
Scale-up innovative models of care that increase convenience and reach people for HCV care, such as telehealth, mobile units, and apps for patient self-management and care coordination.
Provide supportive housing, medication storage, and other social support services for patients undergoing treatment.

Objective 2.3: Increase the capacity of the public health, health care delivery, and health care workforce to effectively identify, diagnose, and provide holistic care and treatment for people with hepatitis C

Increasing public health and health care system capacity to diagnose and treat hepatitis C might promote decentralization of hepatitis C care and increased access to patients who would not otherwise receive hepatitis C care. The American Association for the Study of Liver Diseases (AASLD) and Infectious Diseases Society of America (IDSA) have released [simplified hepatitis C treatment guidance](#) to promote the uptake of hepatitis C treatment in primary health care settings by non-specialists. Supporting partnerships and training platforms to expand capacity for hepatitis C care and management of co-occurring conditions can support collaborative, integrated, and patient-centered models of hepatitis C care.

<i>Objective 2.3 Sample Strategies</i>
Partner with professional societies and academic institutions to increase provision of HCV screening and treatment by health care providers.
Expand access to SUD screening, diagnosis, and MOUD treatment training using virtual platforms such as project ECHO.
Use technology and digital collaboration tools such as online training and case conferencing to expand health care provider expertise in areas with few specialists.

Develop a provider resource directory including a list of health care providers and sites offering hepatitis C treatment.
Identify hepatitis C diagnosis and treatment champions within clinical and nonclinical settings and connect them to resources for hepatitis C care implementation.
Adapt the AASLD/IDSA simplified hepatitis C treatment guidance to primary care and nonclinical settings to promote decentralization and colocation and hepatitis C care.
Implement strategies and promote policies to improve monitoring and care for SUD, cirrhosis, hepatocellular carcinoma, and other HCV-related sequelae.

Objective 2.4: Support the development and uptake of new and improved diagnostic technologies, therapeutic agents, and other interventions for the identification and treatment of hepatitis C

Technologic innovations in diagnostic and therapeutics have the potential to improve the efficiency of hepatitis C care. Many of the strategies in this section of the National Strategic Plan are beyond the scope of a jurisdictional HCV elimination plan, but jurisdictions may consider expanding the use of new HCV diagnostics and specimen collection techniques as they become available. Point-of-care (POC) and home self-testing HCV antibody testing are available, but there is currently no FDA-approved POC RNA test. FDA-approved HCV antibody and RNA tests can be conducted on dried blood spots by validated labs and may become more widely available in the future. Dried blood spots may be simpler to collect in non-clinical settings and reduce the number of people lost to follow-up. HCV molecular sequencing of people in IDU networks can describe transmission networks and identify people at highest risk for transmission to be prioritized for hepatitis C treatment.

<i>Objective 2.4 Sample Strategies</i>
Increase the use of POC HCV antibody testing at nonclinical sites and mobile outreach.
Expand the use of self-collected home HCV antibody self-testing.
Develop laboratory capacity to conduct HCV antibody and RNA testing on dried blood spots.
Utilize HCV molecular surveillance to describe network transmission patterns and prioritize people central in transmission chains for prevention and treatment.

Additional resources relevant to Goal 2:

- University of Washington Hepatitis C Online Course: <https://www.hepatitisc.uw.edu/>
- AIDS Education and Training Center Program HIV/HCV Co-Infection Curriculum: <https://aidsetc.org/hivhcv>
- NASTAD Hepatitis C community navigation model: <https://www.nastad.org/resource/hep-c-community-navigation-model-and-toolkit-improving-care-people-who-use-drugs-and-other>
- NASTAD Hepatitis C telemedicine: https://www.nastad.org/sites/default/files/Hep-Nav-Microsite/hepc_telemedicineguide_r3_as_of_10.23.20.pdf
- NASTAD 340b drug program overview webinar series: <https://www.nastad.org/blog/hepatitis-happenings-and-updates-16>

Goal 3: Reduce HCV–Related Disparities and Health Inequities

Hepatitis C disproportionately impacts certain racial/ethnic minorities, people who use drugs, people who experience homelessness or unstable housing, and people who are incarcerated or detained. These groups often experience stigma and discrimination in health care settings, the workforce, and their community that can exacerbate health disparities. Jurisdictions should implement HCV elimination planning that reduces health disparities in hepatitis C awareness, knowledge of status, and treatment along the care cascade to ultimately reduce hepatitis C incidence and HCV-related mortality. Jurisdictions should also consider ways to ensure that HCV elimination communication and activities are culturally and linguistically appropriate to their key populations. Finally, HCV incidence and prevalence intersect with economic and social conditions that contribute to the disproportionate impact of hepatitis C on certain populations. Therefore, where possible HCV elimination activities should also address the underlying social determinants of health and co-occurring conditions that perpetuate health disparities.

Objective 3.1: Reduce stigma and discrimination faced by people with and at risk for hepatitis C

Stigma can marginalize people with or at risk for hepatitis C and reduce their likelihood of engaging with treatment or recovery resources. Stigma and discrimination in health care settings can reduce the likelihood of screening for HCV, completing hepatitis C treatment, and being cured. Community leaders, including leaders of faith-based groups, can reduce stigma and discrimination among their membership and support HCV elimination efforts in their community. Public health leaders can raise awareness of the adversities and stigma faced by disproportionately impacted groups. Health care systems can implement policies that prevent discriminatory practices and reduce stigma. Finally, some jurisdictions criminalize behaviors that can potentially expose another person to viral hepatitis (e.g., through shared equipment used to inject or use drugs). These laws may further stigmatize certain populations and may merit reconsideration to advance HCV elimination.

<i>Objective 3.1 Sample Strategies</i>
Engage community and faith-based leaders to dispel hepatitis C-related stigma and disseminate hepatitis C prevention, screening, and treatment information to reach groups at high risk for hepatitis C.
Reduce hepatitis C-related stigma through public awareness campaigns by traditional media, social media, and educational settings.
Reduce hepatitis C-related stigma, unconscious bias, and discriminatory practices at health care delivery sites.
Enforce current protections that prohibit discrimination against people with viral hepatitis and reexamine state laws that criminalize drug use, provision of sterile injection paraphernalia, possession of sterile injection paraphernalia, viral hepatitis and behavior related to viral hepatitis.
Educate health care and other partners, the public, and people with viral hepatitis about federal protections against viral hepatitis-related discriminatory policies and practices.
Recognize and compensate peer workers, community workers, and other providers who support and care for key populations.
Identify employment pipelines and employment training that respects people with lived experience and recruits them into the workforce.
Ensure representation of people with lived experience in jurisdictional viral hepatitis elimination planning and compensate them for their time when possible.

Objective 3.2: Reduce disparities in new HCV infections, knowledge of status, and along the cascade of care

Certain populations may experience a disproportionate share of new HCV infections and have lower access to prevention, testing, and treatment. Engaging with individuals and groups in communities that experience health disparities is important to establish or expand efforts to increase screening, diagnose earlier, and achieve better outcomes for people with hepatitis C. HCV micro-elimination projects, or the elimination of HCV in discrete populations through tailored interventions, have been pursued in correctional facilities, tribal nations, health care systems such as the Veterans Administration, and in other settings and populations. Micro-elimination projects allow for the practical implementation of HCV elimination strategies and can advance health equity by improving hepatitis C prevention, diagnosis, and treatment among key populations with a disproportionate burden of hepatitis C.

<i>Objective 3.2 Sample Strategies</i>
Support HCV micro-elimination projects among key populations and settings.
Stratify jurisdictional data by race/ethnicity to assure elimination indicators and strategies are data-driven and address disparities and access to care.
Ensure participation of people from diverse backgrounds in jurisdictional elimination coalition or technical advisory committee.
Foster partnerships with organizations that serve disproportionately impacted populations, including community organizations, provider organizations, academic institutions, and offices of minority health, to raise awareness of hepatitis C.
Support community leaders and people with lived experience to identify, plan, and implement efforts to meet the needs of their community related to hepatitis C.
Provide hepatitis C prevention education, hepatitis C treatment, and substance use disorder treatment for people in correctional settings and people who use drugs.
Require programs funded for HCV elimination to focus on health equity among disproportionately impacted populations and include contributions of people with lived experience.

Objective 3.3: Expand culturally competent and linguistically appropriate hepatitis C prevention, care, and treatment services

Community-based organizations and people with lived experience are more likely to be culturally competent, aware of the priorities of affected populations, and be trusted to provide accurate information and services. Therefore, engagement and partnering with these groups can increase the reach and acceptability of HCV elimination activities.

<i>Objective 3.3 Sample Strategies</i>
Build a multidisciplinary advisory team consisting of representatives from public health, health care, harm reduction, and people with lived experience to ensure that all communications material is scientifically accurate, culturally appropriate, and at an appropriate health literacy level.
Train health care providers in the delivery of culturally competent education, counseling, testing, care, and treatment for hepatitis C, including training for serving populations who are hesitant to seek health care.
Foster collaboration among HCV elimination partners to identify and scale up the implementation of effective strategies to improve hepatitis C prevention, testing, and treatment.

Objective 3.4: Address social determinants of health and co-occurring conditions

Groups disproportionately impacted by hepatitis C often face challenges including poverty, inadequate or unstable housing and transportation, food insecurity, medical mistrust, reduced access to health care, language and cultural barriers, and educational barriers. Inequities in social determinants of health cause disparities in health outcomes that are further compounded by stigma and discrimination based on identity or risk behaviors. Interventions that address the social determinants of health can improve equity in hepatitis C outcomes.

<i>Objective 3.4 Sample Strategies</i>
Integrate hepatitis C prevention and care in programs involving housing, education, employment, the criminal justice system, and other systems that impact social determinants of health.
Promote access to health care that addresses co-occurring conditions and social determinants of health for people at risk for viral hepatitis, HIV, STIs, and substance use disorders.
Scale up implementation of effective interventions that address social determinants of health among people at risk for and with HCV infection.
Explore integrating multiple funding sources to enhance the scope and impact of activities through braiding and blending as allowable by funding streams.

Goal 4: Improve Viral Hepatitis Surveillance and Data Usage

A strong surveillance system is important for measuring hepatitis C burden, assessing progress in HCV elimination, and linking surveillance data to public health action. Improved hepatitis C data completeness, quality, and timeliness allow for jurisdictions and partners to understand the scope of the problem, detect and respond to outbreaks earlier, evaluate interventions, and ensure progress towards health equity. Additional guidance on hepatitis C surveillance can be found at: <https://www.cdc.gov/hepatitis/statistics/GuidelinesAndForms.htm>

Objective 4.1: Improve public health surveillance through data collection, case reporting, and investigation at the national, state, tribal, local, and territorial health department levels

The completeness, quality, and timeliness of surveillance can be improved by adopting standard case definitions for hepatitis C, ensuring case report forms include all reportable data elements, implementing automated electronic laboratory reporting systems, and investigating all acute hepatitis C cases. Jurisdictions should develop plans for routinely reviewing surveillance data; creating an outbreak response management structure; identifying staff for investigation, prevention, and control activities; and communicating with partners and the public.

<i>Objective 4.1 Sample Strategies</i>
Include acute, chronic, and perinatal hepatitis C as a reportable disease using CDC/Council of State and Territorial Epidemiologists case definitions , as well as supporting laboratory data reporting including all detectable and undetectable HCV RNA results and all negative anti-HCV results for children <36 months of age.
Implement, evaluate, and improve automated electronic laboratory reporting for all reportable viral hepatitis laboratory results.
Conduct timely and complete (i.e., limit missing data) case investigations for all acute hepatitis C cases.
Document pregnancy status on viral hepatitis laboratory reports across health care facilities, laboratories, and public health departments to facilitate perinatal hepatitis surveillance.
Establish a jurisdictional framework for HCV outbreak detection and response and increase capacity of surveillance staff to support outbreak investigation and response activities.
Monitor children born to HCV-infected mothers and improve reporting on perinatal hepatitis C infections

Objective 4.2: Improve reporting, sharing, and use of clinical viral hepatitis data

Clinical hepatitis C data are useful to measure the hepatitis C viral clearance cascade within jurisdictions and health care systems. Jurisdictions and health care systems can identify steps in the care cascade where patients are lost to follow-up, reengage them in care, and implement quality improvement activities to increase progression through hepatitis C care.

<i>Objective 4.2 Sample Strategies</i>
Develop a hepatitis C viral clearance cascade surveillance system consistent with CDC guidance to monitor HCV elimination progress and to inform quality improvement efforts.
Use the hepatitis C viral clearance cascade to identify and engage patients in need of HCV RNA testing, linkage to care, initiation of treatment, and confirmation of cure.
Support health care systems in using their electronic health records to measure hepatitis C prevalence, incidence, testing, and treatment.
Integrate other data sources including Medicaid claims, vital records, electronic health record, corrections, and disease registry data to characterize the hepatitis C viral clearance cascade for key populations.

Objective 4.3: Conduct routine analysis of viral hepatitis data and disseminate findings to inform public health action and the public

Routine analysis and dissemination of hepatitis C surveillance data allow jurisdictions and partners to assess the reach, quality, and effectiveness of HCV elimination activities. These data can inform interventions to address gaps in the

hepatitis C viral clearance cascade and ensure health equity in progress towards elimination among key populations or settings.

<i>Objective 4.3 Sample Strategies</i>
Prepare and disseminate an annual viral hepatitis surveillance data report to support surveillance and prevention programs and inform policies.
Develop a public facing dashboard to track and share HCV elimination progress.
Conduct and publish epidemiologic studies with viral hepatitis data and develop interventions based on the findings of data analyses.
Increase data analytics and informatics capacity in public health departments to monitor trends over time and among priority populations.
Include equity metrics for key populations or settings to ensure surveillance identifies health disparities.
Develop interventions to close persistent disparities among key populations or settings.

Goal 5: Achieve Integrated, Coordinated Efforts That Address the Viral Hepatitis Epidemics among All Partners

HCV is part of the syndemic of SUD, HIV, HBV, and STIs. Partners of HCV elimination are often dispersed across a number of internal and external programs and institutions. Collaboration with multiple partners and integrating HCV elimination activities within other programs can amplify the impact of HCV elimination efforts. Ongoing coordination is needed to identify, evaluate, and scale up best practices across partners and systems over the long term.

Objective 5.1: Integrate programs to address the syndemic of viral hepatitis, HIV, STIs, and SUD

State and local health department programs addressing the syndemic may be siloed and have separate funding streams. Integrating certain viral hepatitis, HIV, STI, and SUD program activities and funding can be complimentary and allow for the implementation of interventions that improve the prevention, early diagnosis, and treatment of these intersecting health threats.

<i>Objective 5.1 Sample Strategies</i>
Identify and scale up hepatitis C prevention, testing, linkage to care, and treatment across programs that address the syndemic, including SUD services, mental health program, homeless clinics, rural health outreach, etc.
Provide technical assistance and training for health care providers to manage and treat people with co-morbidities such as viral hepatitis, HIV, STI, and/or substance use disorders.
Integrate resources for programs addressing components of the syndemic and encourage cross-cutting collaboration across state and local programs.
Work to align indicators and integrate surveillance data across programs and clinical service providers that address viral hepatitis, HIV, STI, and substance use disorder services.
Receive technical assistance from national advisory groups such as the CDC Harm Reduction Technical Assistance Center or NASTAD’s Hepatitis Technical Assistance Center .
Establish an internal health department syndemic working group and include members in elimination planning.

Objective 5.2: Establish and increase collaboration and coordination of viral hepatitis programs and activities across public and private partners

Internal and external HCV elimination partners are potential partners in jurisdiction-wide HCV elimination activities. Jurisdictions are encouraged to involve a diverse set of partners in HCV elimination planning and seek to align HCV elimination strategies and identify areas for partnership. HCV elimination strategic planning groups can also be forums to share best practices and lessons learned with other partners.

<i>Objective 5.2 Sample Strategies</i>
Establish viral hepatitis strategic planning groups at the state and local level that include a diverse set of partners to plan and coordinate activities and leverage available resources.
Align strategic planning efforts on viral hepatitis, HIV, STIs, and substance use disorders across state and local partners.
Partner with a variety of partners addressing the syndemic to expand hepatitis C education, testing, linkage to care, and treatment
Disseminate lessons learned and best practices on HCV elimination with strategic planning groups and other partners.

Objective 5.3: Identify, evaluate, and scale up best practices through implementation and communication science research

Recent innovations in HCV testing and treatment have made the prospect of HCV elimination possible. However, additional innovations in prevention, vaccination, diagnostics, and treatment can accelerate HCV elimination. Support and coordination of hepatitis C epidemiologic, translational, and implementation science can improve the rapid uptake of new public health and clinical practice to achieve HCV elimination.



Objective 5.3 Sample Strategies

Form research partnerships between HCV elimination partners and academic and research organizations to support basic and epidemiologic research.

Translate hepatitis C prevention, screening, treatment, and health disparities research into practice through evaluation, implementation, and communication science.

Objective 5.4: Improve mechanisms to measure, monitor, evaluate, report, and disseminate progress toward achieving organizational, local, and national goals

Jurisdictions should continually review and assess how progress is measured, monitored, reported, and used to inform HCV elimination. Routine re-evaluation of HCV elimination efforts can facilitate re-prioritization of the most effective HCV elimination activities to pursue as the epidemiology of hepatitis C evolves during the elimination process.

Objective 5.4 Sample Strategies

Share viral hepatitis surveillance data with decision-makers, health care providers, and community leaders.

Monitor, evaluate, and regularly communicate progress on viral hepatitis strategic goals and objectives according to an established schedule and address areas of deficiency.

Use input from partners to adapt prevention, harm reduction, and treatment services to increase acceptability and accessibility of key populations.

Section 6: Selecting Indicators to Measure Elimination Progress

Jurisdictions should develop indicators and targets for HCV elimination as part of their strategic plan. Indicators may be core indicators that reflect the overall public health goal of HCV elimination activities, proxy indicators that measure related components of core indicators, or programmatic indicators that assess the effectiveness of programs conducting HCV elimination activities. The indicators should be SMART, or specific, measurable, achievable, relevant, and time bound.

Selecting Core Indicators

The 2 core indicators that reflect the broad goals of HCV elimination are 1) reduce hepatitis C incidence and 2) reduce HCV-related deaths. These indicators are used by the [Viral Hepatitis National Strategic Plan](#) and the World Health Organization (WHO) [Global Health Sector Strategy \(GHSS\)](#) to set targets for HCV elimination for 2030 (**Table 4**). Jurisdictions are encouraged to adopt similar hepatitis C incidence and death reduction targets as the Viral Hepatitis National Strategic Plan or WHO Global Health Sector Strategy. While these plans are similar, they have some key differences:

- The Viral Hepatitis National Strategic Plan includes specific incidence and HCV-related death reduction targets for key populations.
- The WHO GHSS includes programmatic indicators including percent of HCV infections diagnosed, percent treated, and needles and syringes supplied per PWID per year.

Table 4. United States and World Health Organization Indicators and Targets for Eliminating Hepatitis C Virus Infection as a Public Health Threat

	U.S. National Strategic Plan (2025 Target)		U.S. National Strategic Plan (2030 Target)		WHO GHSS (2030 Target)	
	Relative*	Absolute	Relative*	Absolute	Relative*	Absolute
Core Indicator: Reduce Hepatitis C Incidence						
Total	≥ 20% reduction	≤ 35,000 estimated cases	≥ 90% reduction	≤ 4,400 estimated cases	≥ 80% reduction	≤ 5 /100,000 per year
PWID	≥ 25% reduction	≤ 1.70 reported cases/100,000	≥ 90% reduction	≤ 0.20 reported cases/100,000	--	≤ 2 /100 per year
AI/AN	≥ 25% reduction	≤ 2.20 reported cases/100,000	≥ 90% reduction	≤ 0.29 reported cases/100,000	--	--
Core Indicator: Reduce Hepatitis C-Related Deaths						
Total	≥ 25% reduction	≤ 3.00 reported cases/100,000	≥ 65% reduction	≤ 1.44 reported cases/100,000	≥ 65% reduction	≤ 2 /100,000 per year
AI/AN	≥ 30% reduction	≤ 7.17 reported cases/100,000	≥ 65% reduction	≤ 3.58 reported cases/100,000	--	--
Non-Hispanic Black	≥ 30% reduction	≤ 4.92 reported cases/100,000	≥ 65% reduction	≤ 2.46 reported cases/100,000	--	--
Proxy Indicators						
Viral Clearance	≥ 35% increase	≥ 58% cleared	≥ 85% increase	≥ 80% cleared	--	≥80% cleared
Programmatic Indicators						
% diagnosed of people living with HCV infection	--	--	--	--	--	≥ 90%
% treated of those diagnosed with HCV infection	--	--	--	--	--	≥ 80%
# needles & syringes/PWID/year	--	--	--	--	--	≥ 300

AI/AN: American Indian/Alaskan Native, GHSS: Global Health Sector Strategy, HCV: Hepatitis C virus, PWID: People who inject drugs
 * WHO GHSS uses 2015 as the baseline for its relative reductions in incidence and HCV-related death targets while the Viral Hepatitis National Strategic Plan uses 2017 baseline data.

In the United States, hepatitis C incidence is estimated using the number of acute hepatitis C cases reported to NNDSS by most jurisdictions. While some jurisdictions also report new chronic hepatitis C cases, data on new chronic hepatitis C cases is less complete than acute hepatitis C cases. Further, acute hepatitis C cases may more closely reflect recent HCV transmission. Of note, since most patients with acute hepatitis C do not seek medical care and are not diagnosed, CDC applies a multiplier reflecting the proportion of acute hepatitis C cases that are not reported to estimate the true number of acute hepatitis C cases nationally. This multiplier has not been validated at the level of the jurisdiction. Jurisdictions with established reporting of new chronic cases may also want to report this value since it more closely reflects the number of people in need of hepatitis C treatment each year.

For measuring mortality, jurisdictions can use HCV-related deaths, which are routinely captured by NVSS and reported in the annual CDC surveillance report for all states and the District of Columbia. Additional county-level HCV-related death data are available through Emory University's [HepVu](#). More granular death data may be useful in identifying disparities in HCV-related deaths within a jurisdiction and guide the allocation of resources for HCV elimination activities. Data on acute and new chronic hepatitis C cases and HCV-related deaths can be found at CDC Wonder: <https://wonder.cdc.gov/>.

Both the Viral Hepatitis National Strategic Plan and WHO Global Health Sector Strategy have elimination targets based on relative reductions in hepatitis C incidence and HCV-related deaths. The absolute target value for these relative targets is clarified in the Viral Hepatitis National Strategic Plan. These relative reductions reflect progress towards HCV elimination and are referred to as thresholds for elimination of HCV as a public health threat. The emphasis on relative reductions in these core indicators means that jurisdictions with a high baseline burden of disease may still meet their target and have a higher absolute core indicator value than jurisdictions with lower baseline. Given this, some low-burden jurisdictions may consider choosing targets based on absolute hepatitis C incidence and death reduction targets that are more meaningful in terms of their interpretation of eliminating HCV as a public health threat.

Selecting Proxy Indicators

For the purposes of HCV elimination strategic planning, proxy indicators are indirect measures that correlate with the core measures of reducing hepatitis C incidence or deaths. Hepatitis C viral clearance, or the proportion of people with a detectable HCV antibody who have undetectable HCV RNA, is a proxy measure for reducing HCV-related deaths. Hepatitis C viral clearance can be achieved by natural clearance after acute infection or through treatment. Given that the rate of natural clearance is relatively constant, changes in viral clearance are driven primarily by increasing treatment cures. The baseline national proportion of hepatitis C viral clearance, which includes both natural clearance and cure from treatment, is 43% using NHANES data from 2013–2016. The Viral Hepatitis National Strategic Plan establishes the target of $\geq 58\%$ of people with positive HCV antibody having viral clearance by 2025 and $\geq 80\%$ achieving viral clearance by 2030. Jurisdictions may consider adopting this measure or further tailoring based on the epidemiology and elimination activities in their jurisdiction.

Chronic hepatitis C prevalence is a related indicator that can be used as a proxy measure for reducing hepatitis C incidence. Hepatitis C prevalence increases as a result of new HCV infections and reinfections among people previously cured by treatment and decreases with treatment cures and deaths. Since there are fewer deaths relative to new HCV infections and treatment cures, hepatitis C prevalence can assess whether new HCV infections outpace treatment cures. Hepatitis C prevalence estimates by state are calculated using NHANES, NVSS, American Community Survey, and U.S. Census data and are available online at Emory University's [HepVu](#).

Selecting Programmatic Indicators

Programmatic indicators are metrics that assess the effectiveness of specific HCV elimination programs. There are no national programmatic indicators in the Viral Hepatitis National Strategic Plan, but the WHO Global Health Sector Strategy includes as targets: increasing the percentage of people diagnosed among people with hepatitis C to $\geq 90\%$,

increasing the percentage of people treated of those with diagnosed HCV infection to $\geq 80\%$, and increasing number of needles and syringes distributed per PWID per year to ≥ 300 . The percentage of people diagnosed among people with hepatitis C can be measured with NHANES data. The percentage of people treated among those with diagnosed HCV infection can be measured from hepatitis C viral clearance cascade data or within specific health systems that can generate hepatitis C care cascades from their electronic health records. The number of needles and syringes distributed per PWID per year is not easily measured on a population level because there is currently no surveillance system for SSPs and no state-level estimates of PWID populations. However, jurisdictions can consider measuring and extrapolating this number based on the number of needles and syringes distributed per PWID per year within specific SSPs.

Jurisdictions may consider developing their own programmatic indicators or adapting existing ones they use for their populations or specific programs. Programmatic targets can apply to specific programs, key populations, or the overall population of the jurisdiction depending on the ease and availability of data. Hepatitis C viral clearance cascade metrics may be particularly useful programmatic indicators to identify key steps where patients do not progress in the cascade.

Programmatic indicators should be selected to achieve a balance between assessing meaningful programmatic progress but not exceeding data collection and analysis capacity. Absolute targets can be set for indicators without baseline measurements, and either absolute or relative targets can be used for indicators with baseline data. Some example programmatic indicators are included below.

<i>Programmatic Indicator Examples</i>
Proportion of acute hepatitis C cases investigated and reported
Proportion of adult population ever tested for HCV
Proportion of pregnant people tested for HCV
Proportion of pregnant people with detectable HCV RNA completing hepatitis C treatment postpartum
Number of PWID utilizing SSP services receiving sufficient sterile injection paraphernalia for all injections
Number of hepatitis A and hepatitis B vaccinations administered to clients in SUD treatment centers or SSPs
Number of people receiving MOUD for opioid use disorder
HCV antibody positivity rate among funded HCV testing community-based organizations
Number of hepatitis C treatment courses completed
Percentage of HCV antibody positive people receiving viral testing
Proportion of people initially testing positive for HCV by any measure (HCV-Ab, RNA, or genotype) who have an undetectable viral detection test (RNA, genotyping) for HCV
Proportion of people with prior detectable HCV by a viral detection test who subsequently have an undetectable viral detection test
Proportion of people with cleared HCV infection who subsequently have a detectable HCV by viral detection test

Tracking Disparities in Elimination

Advancing HCV elimination among key populations with a disproportionate burden of hepatitis C can both reduce health disparities and accelerate overall HCV elimination. However, disparities in outcomes among key populations should be actively measured to ensure that overall progress also includes progress among key populations to prevent a widening health disparity. The Viral Hepatitis National Strategic Plan includes specific incidence reduction targets for PWID and American Indian/Alaskan Native (AI/AN) people, and specific HCV-related death reduction targets for AI/AN and non-Hispanic Black people. Jurisdictions are encouraged to identify key populations with a disproportionate burden of hepatitis C relevant to their jurisdiction and track HCV elimination progress using core, proxy, and programmatic indicators when possible based on data availability.

Persistent or widening disparities in the core indicators of hepatitis C incidence or HCV-related deaths would suggest that the benefits of HCV elimination efforts are not reaching all populations to the extent needed. Similar to the Viral

Hepatitis National Strategic Plan, jurisdictions should consider adopting incidence and HCV-related death reduction targets specific to PWID, American Indian/Alaska Native, or non-Hispanic Black/African American populations.

Core indicators alone cannot identify the changes in strategy needed to close health disparities. The proxy measure of hepatitis C prevalence can vary widely by key population but is infrequently measured. Jurisdictions that develop their hepatitis C viral clearance cascades can measure overall hepatitis C viral clearance but also identify where progress among key populations is stalled and identify interventions for improvement. Disparities in programmatic indicators can further identify gaps in service coverage for hepatitis C prevention, testing, and treatment. Progress in closing hepatitis C health disparities is important to report for ongoing monitoring of HCV elimination and working with partners to prevent widening health disparities.

Conclusion

Each jurisdiction faces unique challenges in HCV elimination and has different resources and partners to achieve HCV elimination. Strategic plans that are customized based on the goals and needs of the jurisdiction and community are more likely to be successful and contribute to national HCV elimination goals. Engaging partners in HCV elimination strategic planning ensures representation of diverse perspectives, promotes complimentary elimination approaches, and facilitates buy-in from HCV elimination partners and the people directly affected by hepatitis C.

Using indicators to track HCV elimination progress can promote the efficient and equitable distribution of limited resources. HCV elimination coalitions or committees should meet at least twice per year to review progress in HCV elimination, identify disparities in progress, and adapt strategies to close persistent gaps in HCV elimination. Collective progress on HCV elimination in jurisdictions will advance the reality of eliminating HCV as a public health threat.

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Appendix. Examples of national, state, and city hepatitis elimination plans

Strategic Plan	Source	Hepatitis Covered
Viral Hepatitis National Strategic Plan for the United States	United States Department of Health and Human Services	ABC
Division of Viral Hepatitis 2025 Strategic Plan	Centers for Disease Control and Prevention	ABC
A National Strategy for the Elimination of Hepatitis B and C	National Academies of Sciences, Engineering, and Medicine	BC
Hep Free 2030: The Hawai'i Hepatitis Elimination Strategy	Hawaii Department of Health	ABC
Hep C Free Washington: Plan to Eliminate Hepatitis C in Washington State by 2030	Washington State Department of Health	C
Hep C Free LA: Louisiana Hepatitis C Elimination Plan 2019-2024	Louisiana Department of Health	C
Maryland Hepatitis C Strategic Plan	Maryland Department of Health	C
2018 State Plan for Hepatitis C	Texas Health and Human Services	C
2017-2021 Iowa Hepatitis Action Plan	Iowa Department of Public Health	C
California Viral Hepatitis Prevention Strategic Plan, 2016-2020	California Department of Public Health	BC
The Florida Hepatitis Prevention Action Plan 2016-2020	Florida Department of Health	ABC
Viral Hepatitis Strategic Plan 2016-2020	New York State Department of Health	ABC
Hepatitis C Virus (HCV) in New Mexico: Statewide Comprehensive Plan and Profile of the Epidemic	New Mexico Department of Health	C
End Hep C SF: Strategic Plan 2020-2022	End Hep C SF	C