

Addressing Structural Barriers to HCV Treatment

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Module 4: [Evaluation and Preparation for Hepatitis C Treatment](#)

Lesson 3: [Addressing Structural Barriers to HCV Treatment](#)

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<https://www.hepatitisC.uw.edu/go/evaluation-treatment/addressing-structural-barriers-to-treatment/core-concept/all>.

Background

Overview

There are an estimated 4.1 million Americans with hepatitis C virus (HCV) infection, making HCV the most common blood-borne infectious disease in the United States.[1] It is also associated with significant morbidity and mortality, driven largely by progression to liver cirrhosis, liver cancer and death. Infection with HCV is often associated with substance use, mental health disorders and poverty, all of which contribute to the stigma and discrimination associated with this infection. Since 2014, HCV has become one of the few chronic viral infections that can be cured through the use of safe, well-tolerated, oral direct-acting antiviral (DAA) medications. The currently recommended DAA therapy cures HCV infection in 95% or more of persons with chronic HCV.[2] The availability of DAA therapy has revolutionized the management of HCV and provides an opportunity to not only prevent the negative health consequences of HCV at the individual level but also to prevent new infections by reducing the reservoir of people infected with HCV who can, in turn, transmit HCV to others. This concept of treatment as prevention is supported by modeling data and more recent real-world data suggesting that treating a significant proportion of people with HCV can lead to reductions in both incident and prevalent infections over time.[3,4,5]

CDC 2025 and 2030 HCV Elimination Goals

The Division of Viral Hepatitis at the Centers for Disease Control and Prevention has issued a 2025 strategic plan for HCV elimination that outlines the following goals for 2025 and 2030 when compared to a baseline in 2017 (Figure 1).[6]

- Decrease new HCV infections by 22% for 2025 and by 90% for 2030
- Reduce HCV-related death rate by 27% for 2025 and by 65% for 2030
- Reduce rate of new HCV infections in persons who inject drugs by 26% for 2025 and by 90% for 2030
- Increase proportion of persons with HCV viral clearance by 35% for 2025 and by 86% for 2030

These HCV elimination goals have proved challenging amid the ongoing opioid epidemic in the United States.[7,8,9] Indeed, from 2015 to 2021, there has been an overall 106% increase in the estimated number of new HCV infections, but there was a slight decline from 2021 (69,800 new infections) to 2022 (67,400 new infections).[10,11] Multilevel barriers at the patient, provider, and system levels contribute to difficulties with access to HCV testing and treatment, substance use treatment, and harm reduction services required to achieve HCV elimination goals. This topic review will identify and discuss the major structural barriers to HCV treatment in the United States.

The Path to HCV Cure: HCV Care Continuum

Steps in HCV Care Continuum

The “care continuum” or the “cascade of care” is a public health framework that outlines the benchmarks a society needs to track in order to optimize care for its population and it was first introduced in the HIV arena. [12,13] The main steps in the HCV care cascade include testing to diagnose HCV infection, linkage to HCV care for those individuals who test positive, treatment of HCV with DAA medications, and measurement of HCV RNA level at 12 weeks after completion of treatment to evaluate whether the individual is cured of HCV (Figure 2). An undetectable HCV RNA 12 weeks after the end of treatment is considered a sustained virologic response (SVR 12) and is equivalent to an HCV cure.

HCV Care Continuum Prior to DAA Era

Prior to the availability of oral DAAs, estimates of progress along the HCV care continuum suggested that approximately 50% of individuals chronically infected with HCV were aware of their HCV infection, 16% were prescribed HCV treatment, and 9% were cured (Figure 3).[14]

HCV Care Continuum in DAA Era in 2018

A study conducted in 2018 estimated that only 52% of individuals with chronic HCV were aware of their infection, and 37% were cured (Figure 4).[15] The investigators projected that with the current gaps in the cascade, only marginal improvement would be expected to occur by 2030, with 62% aware and 49% cured by 2030.[15] In a more recent cross-sectional study of the National Health and Nutrition Examination Survey (NHANES), among individuals followed from 1999-2016, only 49.8 % of the participants were aware of their HCV infection.[16]

HCV Testing: Access, Efficiency, and Reimbursement

Limited Testing and Awareness of Infection

Many persons with chronic HCV infection do not have symptoms and only present with symptoms decades after infection when the disease has advanced to liver cirrhosis or hepatocellular cancer. Diagnosis of HCV infection requires specific tests and is often carried out as a 2-step process. The first test is an HCV antibody, a marker of previous infection with HCV. A reactive antibody test must then be confirmed with HCV RNA testing to assess for viremia. Detection of HCV RNA is consistent with ongoing infection and should be followed immediately with an evaluation for antiviral therapy. Historically, there has been confusion about this algorithm and limited infrastructure for HCV testing.[17]

Expanding Access to HCV Testing

It is critical that HCV testing is made available in a wide range of settings and provided in a non-stigmatizing manner. Based on 2020 recommendations from the Centers for Disease Control and Prevention (CDC), testing for HCV is currently recommended at least once in a lifetime for all adults 18 years of age or older and all pregnant persons during each pregnancy; one-time HCV screening is also recommended, regardless of age, for persons with recognized conditions or exposures (Table 1).[18] Further, routine periodic HCV testing is recommended at least annually for populations with ongoing risk of incident HCV infection, such as people who use drugs and men with HIV who have sex with men[18]. These recommendations are also endorsed in the AASLD-IDSA HCV Guidance and by the U.S. Preventive Services Task Force (USPSTF).[19,20] To increase access to HCV testing, it should be provided in a broad range of settings, including primary care clinics, obstetric offices, emergency departments, public health clinics, substance use treatment programs, syringe service programs, jails and prisons, and other community-based settings. Multiple studies have demonstrated the feasibility and effectiveness of these approaches to increasing access to HCV testing.[21,22]

Improving HCV Testing Efficiency

Consideration will need to be given to the needs of the populations being tested in these settings to ensure awareness of infection and subsequent linkage to treatment for those who are found to have ongoing HCV infection. Implementation strategies that simplify the 2-step HCV testing algorithm are needed. For individuals being tested in settings where they routinely receive care, such as in a primary care setting, reflex antibody to HCV RNA testing (where remaining serum from a person who tested positive for HCV antibody is then tested for HCV RNA). This reflex laboratory process is preferred so that chronic HCV, if present, can be diagnosed with one blood draw.[18,19] In other settings, such as community-based and drop-in testing centers, emphasis may need to be placed on the use of point-of-care, rapid HCV antibody testing (OraSure Technologies), whereby samples for testing can be collected by fingerstick with results available in 20 minutes. Since there are no FDA-approved point-of-care rapid HCV RNA tests, persons with a positive rapid HCV antibody test require additional testing with laboratory-based HCV RNA testing. Strategies that utilize point-of-care testing may be particularly impactful for reducing disparities in HCV status awareness, as identified in the National Viral Hepatitis Strategic Plan and endorsed in the National Viral Hepatitis C Elimination Initiative.[6,23] A rapid HCV testing program implemented in a public health clinic increased the proportion of people who were made aware of their positive test result from 65.7% (90 of 137) when only traditional laboratory-based technologies were available for HCV testing to 97.9% (138 of 141) after availability of rapid HCV testing.[24]. Similarly, on-site rapid HCV antibody testing bundled with HIV rapid testing in an opioid treatment program setting was associated with increased receipt of rapid test results 45/79 (69%) compared to standard of care referrals to off-site laboratory testing 13/89 (19%).[25]

Reimbursement for HCV Testing

Policy changes, such as the Affordable Care Act, have expanded access to insurance for a large proportion of the United States population and provided coverage for HCV testing without cost-sharing. To maximize the

benefits of the expanded HCV testing recommendations and coverage for this testing, efforts are required to increase awareness and support for providers to implement non-stigmatizing universal HCV testing. Other implementation strategies that could facilitate increased HCV testing include electronic medical record prompts and reminders.[[26](#),[27](#),[28](#)]

Improving Services for Linkage-to-Care

Linkage to care is a key step in the pathway to effective HCV treatment. Multiple studies have shown a major drop-off in the HCV care continuum at this step.[29] Thus, consideration will need to be given to the needs of persons undergoing HCV testing to ensure those with positive HCV RNA test results become aware of their infection and are subsequently linked to HCV care and treatment. Several care continua have shown a steep drop-off from awareness of HCV infection to attendance at an appointment for an initial HCV evaluation.[30,31]

Patient Navigation Services

One approach to increase linkage to care for HCV treatment evaluation is providing patient navigation services. Lack of these services has been reported as a significant barrier to HCV treatment.[32] Patient navigators can play varied roles, including evaluating insurance needs and assisting with insurance applications, appointment scheduling, facilitating appropriate referrals, and providing appointment reminders and linkage to community resources for transportation, assisting with food security or treatment for substance use. An urban safety-net health system that screened 21,018 people for HCV over a 2-year period between 2017 and 2019 identified 878 individuals with positive HCV RNA tests. Of 562 patients with chronic HCV who were eligible for navigation services, 50% (281 of 562) were successfully linked to imaging services.[33] Among those who completed imaging, 72% (203 of 281) attended their first HCV medical evaluation appointment.[33] Another study evaluating outcomes of a patient navigation program in which a team consisting of a nurse navigator, pharmacist, and pharmacy technician provided support for completion of forms for HCV drug access, appointment reminders, and missed appointment rescheduling demonstrated a 3.7-fold increased likelihood of linkage to HCV care and a 3.2-fold increased likelihood of HCV treatment initiation at 6 months among the 584 patients diagnosed with HCV after program implementation compared to 796 patients diagnosed prior to program implementation.[34] These patient navigation services may be especially important for patients with limited financial resources and comorbid medical conditions, such as substance use and mental health disorders, or complex social circumstances, such as homelessness or previous incarceration.[35] These populations also are more likely to be infected with HCV.[1] Using an embedded nurse navigator model at the University of Virginia infectious diseases HCV clinic, 76% (624 of 824) of persons referred for HCV care were successfully linked to care.[36]

Peer Navigation

Peer navigation, the involvement of a person with a lived experience of HCV to support another in HCV linkage to care and treatment, is an approach to patient navigation that has been most studied in populations of people who use drugs.[37] Peer support has been associated with a higher rate of HCV linkage; in a trial that recruited participants from outreach services who had problematic drug use and housing instability, 37% (23 of 63) people who were randomized to the peer support group had successful HCV linkage to care compared with only 18% (7 of 38) of those persons in the control group.[38]

Contingency Management

Another approach that has been evaluated to improve linkage to care is contingency management, a type of behavioral therapy where positive behavior change is reinforced, incentivized, or rewarded. This strategy was shown to be effective in a small pilot study that examined contingency management as a strategy to improve HCV linkage to care rates among people who use drugs: participants were recruited through accessing a syringe service program in New York City and were enrolled in a contingency management arm or an enhanced standard of care arm.[39] Participants in the contingency management arm received an expedited appointment, transportation assistance, a \$25 incentive for up to 10 appointments, and \$10 for each returned weekly medication blister pack; participants in the enhanced standard of care arm received only an expedited appointment and transportation assistance.[39] In this study, 74% (14 of 19) in the contingency management arm were successfully linked to HCV care compared to 6 of 20 (30%) in the enhanced standard

of care arm, demonstrating that contingency management can be an effective strategy for linkage to care.[\[39\]](#)

Limitations for Implementation of Services

Programmatic efforts and interventions outlined above are largely driven by time-constrained grant funding with limited opportunities for widespread implementation and sustainability. Efforts are needed to identify funding sources to support the implementation and sustainability of these strategies for HCV treatment linkage.

Expanding Medical Provider Capacity

Treatment of persons with chronic HCV has traditionally been provided in gastroenterology and infectious diseases specialty settings. This is a major structural barrier to HCV treatment, since a limited number of specialists available to provide treatment can result in restricted access to treatment, long wait times for appointment scheduling, or, at times, lengthy travel to reach such settings, and, ultimately, attrition and loss of follow-up. The availability of pangenotypic oral DAAs that are highly effective, well tolerated, and safe has made the treatment of chronic HCV infection feasible for many primary care clinicians. The management of persons with chronic HCV by a specialist is now only required in select cases, such as for patients with decompensated cirrhosis or who have had liver transplantation. Streamlined HCV evaluation and simplified treatment algorithms for treatment-naïve persons with chronic HCV have been generated in the AASLD-IDSA HCV Guidance to promote HCV treatment by non-expert primary care clinicians.[40,41,42] Several studies have demonstrated the effectiveness of HCV treatment by primary care providers, substance use disorder treatment specialists, nurse practitioners, physician assistants, and pharmacists.[43,44] Nurse-led models of HCV treatment delivery have also proven effective.[45] A critical step to increasing the number of HCV treatment locations is establishing training and support for various disciplines of medical providers in these settings. Several models and programs are available that can increase medical provider's capacity and skills in providing HCV treatment.

- **Project ECHO:** The Extension for Community Healthcare Outcomes (ECHO) model was developed at the University of New Mexico Health Sciences Center as an innovative strategy to improve treatment access for underserved populations with complex medical problems, including hepatitis C. In this model, providers co-manage their initial patient cohort via a confidential teleconferencing platform with input from experts and their community of peers.[46] Further, the ECHO program is constructed such that in addition to providing direct consultation, subject-matter experts provide didactic training and facilitate collaborative learning for medical providers to gain competence and confidence in providing HCV treatment. This program has shown that hepatitis C treatment outcomes (sustained virologic response rates) were comparable for patients treated at ECHO sites throughout New Mexico when compared with patients treated at the University of New Mexico viral hepatitis clinic.[46] A follow-up study that involved the New Mexico Veterans Affairs (VA) hepatitis C ECHO program demonstrated that the 6,431 patients who had a primary care provider who attended at least one ECHO session had higher HCV treatment rates compared to the 32,322 VA primary care providers who did not participate in ECHO, but SVR rates were the same in the two groups.[47] Other adaptations of the ECHO model have been shown to similarly increase the number of medical providers trained to provide HCV treatment in non-specialist settings.[48,49]
- **Electronic and Remote Consultation:** Less intensive models, such as electronic/remote consultation services with a team-based approach to HCV treatment in primary care settings, have also been associated with increased rates of HCV treatment. For example, an initiative was implemented in a safety net health system in California in which primary care providers were offered a 4-hour HCV treatment overview and ongoing support for providing HCV treatment through an electronic consultation system.[50] As a result, there was a 3-fold increase in HCV treatment in the post-implementation period compared to the pre-implementation period.[50]. The [National Clinician's Consultation Center](#), based at the University of California at San Francisco, provides clinician-to-clinician advice on HCV mono-infection and HCV-HIV coinfection management; this service provides the option to submit a clinical case online or to call for a phone consultation (844) 437-4636, available Monday-Friday 9 a.m. to 8 p.m. EST.

Expanding Settings for HCV Clinical Care and Treatment

Other factors, such as mistrust of the health system, perceived and enacted stigma, and competing priorities, may negatively impact the willingness or ability of some individuals to link to HCV care in specialist settings.[\[51\]](#) Increasing access to HCV therapy for the broad range of populations who need HCV treatment requires that treatment services are made available in a wide range of settings where individuals feel safe and comfortable accessing care. These settings include primary care, substance use disorder treatment programs, public health clinics, needle and syringe service programs, jails and prisons, and other community-based settings. Policies that incentivize health systems to screen for and treat hepatitis C may be beneficial in expanding HCV testing and treatment to a broader range of settings, such as primary care, corrections, or substance use disorder care settings.

Insurance and Medicaid Restrictions to HCV Treatment Access

Requirement for Prior Authorization for HCV Treatment Coverage

Although many state Medicaid programs have removed the need for prior authorization of DAAs, prior authorization is still a requirement in some jurisdictions, depending on the health insurance payer. This process requires that medical care providers complete and submit documentation to insurance companies or payers to get advance approval for medications to be covered by the payer. These processes vary by payer/insurance plan, require the completion of various forms, are generally time-consuming, and can delay HCV treatment. Some studies have reported that pre-authorization requirements significantly increase medical provider workload, and, in many cases, remain a significant obstacle to HCV care delivery.[52] Prior authorizations can also request additional information that should not impact coverage of HCV treatment, such as substance use status. This information is then used as justification to deny coverage of treatment. For medical providers and health care settings willing to take on HCV treatment, the additional workload and time required for prior authorization requests may serve as a deterrent to providing HCV treatment. Prior authorizations also have the potential to widen disparities in access to HCV treatment.[52]

Restricted Access to HCV Treatment Medications

Oral DAAs are significantly less expensive now than when they were initially approved in 2014. Many payers, however, continue to restrict access to treatment due to cost. In particular, restrictions based on fibrosis stage and sobriety continue to pose a significant barrier to accessing HCV treatment.[53,54,55] The AASLD-IDSA HCV Guidance recommends HCV treatment for all persons with acute or chronic HCV infection, except those with a short life expectancy that cannot be remediated by HCV therapy, liver transplantation, or another directed therapy.[40] In contrast with these recommendations, many states have restrictions on Medicaid programs that restrict access to HCV treatment medications.

Restrictions Based on Fibrosis Stage

Multiple studies have shown an association between fibrosis stage and HCV treatment initiation, including a recent analysis of the HCV care continuum among 560 individuals treated for HCV at a public health clinic.[56] In this analysis of data collected at a time when the state Medicaid program had restrictions limiting HCV treatment coverage to Metavir stage F2 or greater, it was telling that of 227 patients with stage F2 or greater fibrosis, 205 (90%) initiated HCV treatment, compared to only 61 (51%) of patients with stage F0-F1 liver disease.[56] The logical assumption that HCV treatment uptake will increase if restrictions are removed is supported by data, including a recent study showing a 1.8-fold increase in HCV treatment initiation after HCV restrictions were removed for persons with HIV coinfection.[57] The gains in HCV treatment uptake were even more marked among people who inject drugs, a population that frequently suffers from disparities in access to HCV treatment; this group had a 3.6-fold increase in HCV treatment uptake after the removal of fibrosis stage restrictions.[57] Fibrosis restrictions potentially have a major impact on the role of HCV treatment as prevention. For example, young people who inject drugs or men who have sex with men are more likely to have recently acquired HCV, and, by extension, have lower fibrosis scores, which may result in denial of treatment. These individuals are also more likely to transmit HCV to others and thus should be a priority population for HCV treatment. The AASLD-IDSA HCV Guidance recommends against excluding persons with low fibrosis scores from receiving HCV therapy.[40]

Restrictions Based on Substance Use

Sobriety restrictions, which require patients to be abstinent of alcohol or other drug use for varying time durations prior to payer approval of HCV treatment, are also a major barrier to HCV treatment. Multiple studies have demonstrated high HCV cure rates regardless of ongoing substance use.[58,59] In addition, modeling and real-world data have demonstrated that increases in HCV treatment uptake in persons who inject drugs are needed to significantly reduce the reservoir of HCV-viremic individuals who can subsequently

transmit HCV to others.[4,5,60] In addition, these restrictions further widen treatment disparities for people who use drugs and send the message that this group is not deserving of HCV treatment. The AASLD-IDSA HCV Guidance recommends against any mandatory pretreatment screening for alcohol or drug use.[40] In addition, the AASLD-IDSA HCV Guidance states that HCV treatment should not be restricted among persons with alcohol or injection drug use by requiring sobriety or abstinence, noting these types of prerequisites create a major barrier to HCV treatment, thereby potentially excluding populations that would likely derive clinical and prevention benefits from therapy.[40]

Large-Scale Discounted Purchasing of Medication

Instead of restricting HCV treatment access, state Medicaid programs and other jurisdictions could explore innovative models such as the “Netflix” subscription payment model adopted by the state of Louisiana, in which a lump sum was agreed upon and paid to a pharmaceutical company in exchange for an unlimited number of treatment courses to treat all Medicaid beneficiaries and individuals in correctional facilities in the state over a 5-year period.[61] With a standard model that does not include lump-sum payments, pharmaceutical companies will make the greatest profit by increasing the price per treatment, which inherently restricts access to medications. The lump-sum payment strategy allows pharmaceutical companies to increase their profit and guarantee revenue without limiting access to medications. Other strategies may also be worth exploring, such as the Australian national DAA model, in which unrestricted access to oral DAA treatment is provided with an annual cap of expenditure for HCV treatment.

Resources for Medication Access

- **State of Medicaid Access** The National Viral Hepatitis Roundtable and Harvard Center for Health Law and Policy Innovation provide an online, state-by-state assessment of DAA access through Medicaid programs (see [Hepatitis C: State of Medicaid Access](#)).[62]
- **Patient Advocate Foundation:** The Patient Advocate Foundation's [Hepatitis C CareLine](#) is a hotline (800-532-5274) for patients and medical providers; this is a nonprofit organization that provides assistance, including case management services, to persons living with chronic HCV infection. The Hepatitis C CareLine has case managers who can assist patients in accessing medications to treat HCV.
- **Patient Assistance Programs:** The Target HIV Site has a [Patient Assistance Program for Hepatitis C Medications Costs](#) online resource for patient assistance programs, including programs accessed through foundations and from the pharmaceutical companies that manufacture the medications.

Summary Points

- There is a real opportunity to achieve HCV elimination by reducing the HCV viral burden on a population-based level through large-scale treatment as prevention with DAAs. There are, however, a number of structural barriers and gaps in the HCV care cascade that pose challenges to this goal.
- Identifying persons with HCV through widespread screening has been hampered by limited access to testing and an inefficient testing algorithm that still relies on a blood draw and laboratory-based assessment of HCV RNA to confirm chronic infection. Reliable point-of-care RNA testing is needed to facilitate diagnosis and linkage.
- Linkage to care is another area in need of improvement in the care cascade. Strategies such as navigation services or contingency management have proven successful but are resource-intensive to sustain.
- In order to expand HCV treatment, more medical providers and health care settings must be called upon to deliver HCV care, which has historically been the purview of specialists and hospital-based settings. Non-traditional care settings and nonspecialist providers have been shown to deliver HCV treatment with comparable success rates.
- Insurance-mandated prerequisites and prior authorization remain among the major structural barriers to more equitable and expansive HCV care. Exclusions based on disease severity or substance use continue to restrict access to key populations despite recommendations against such exclusions and emphasizing the importance of treating all individuals with chronic or acute HCV infection.

Citations

1. Hofmeister MG, Rosenthal EM, Barker LK, et al. Estimating Prevalence of Hepatitis C Virus Infection in the United States, 2013-2016. *Hepatology*. 2019;69:1020-31.
[\[PubMed Abstract\]](#) -
2. Falade-Nwulia O, Suarez-Cuervo C, Nelson DR, Fried MW, Segal JB, Sulkowski MS. Oral Direct-Acting Agent Therapy for Hepatitis C Virus Infection: A Systematic Review. *Ann Intern Med*. 2017;166:637-48.
[\[PubMed Abstract\]](#) -
3. Braun DL, Hampel B, Ledergerber B, et al. A Treatment-as-Prevention Trial to Eliminate Hepatitis C Among Men Who Have Sex With Men Living With Human Immunodeficiency Virus (HIV) in the Swiss HIV Cohort Study. *Clin Infect Dis*. 2021;73:e2194-e2202.
[\[PubMed Abstract\]](#) -
4. Iversen J, Dore GJ, Catlett B, Cunningham P, Grebely J, Maher L. Association between rapid utilisation of direct hepatitis C antivirals and decline in the prevalence of viremia among people who inject drugs in Australia. *J Hepatol*. 2019;70:33-9.
[\[PubMed Abstract\]](#) -
5. Martin NK, Vickerman P, Grebely J, et al. Hepatitis C virus treatment for prevention among people who inject drugs: Modeling treatment scale-up in the age of direct-acting antivirals. *Hepatology*. 2013;58:1598-609.
[\[PubMed Abstract\]](#) -
6. Centers for Disease Control and Prevention (CDC). Division of Viral Hepatitis 2025 Strategic Plan, CDC; 2020. 1-22.
[\[CDC\]](#) -
7. Zibbell JE, Asher AK, Patel RC, et al. Increases in Acute Hepatitis C Virus Infection Related to a Growing Opioid Epidemic and Associated Injection Drug Use, United States, 2004 to 2014. *Am J Public Health*. 2018;108:175-181.
[\[PubMed Abstract\]](#) -
8. Zibbell JE, Hart-Malloy R, Barry J, Fan L, Flanigan C. Risk factors for HCV infection among young adults in rural New York who inject prescription opioid analgesics. *Am J Public Health*. 2014;104:2226-32.
[\[PubMed Abstract\]](#) -
9. Zibbell JE, Iqbal K, Patel RC, et al. Increases in hepatitis C virus infection related to injection drug use among persons aged ≤ 30 years - Kentucky, Tennessee, Virginia, and West Virginia, 2006-2012. *MMWR Morb Mortal Wkly Rep*. 2015;64:453-8.
[\[PubMed Abstract\]](#) -
10. Centers for Disease Control and Prevention (CDC). Hepatitis C Surveillance 2022. Published April 2024.
[\[CDC\]](#) -
11. Centers for Disease Control and Prevention (CDC). 2019 Viral Hepatitis Surveillance Report—Hepatitis C. Published May 2021.
[\[CDC\]](#) -
12. Zhou K, Fitzpatrick T, Walsh N, et al. Interventions to optimise the care continuum for chronic viral hepatitis: a systematic review and meta-analyses. *Lancet Infect Dis*. 2016;16:1409-22.
[\[PubMed Abstract\]](#) -

13. Safreed-Harmon K, Blach S, Aleman S, et al. The Consensus Hepatitis C Cascade of Care: Standardized Reporting to Monitor Progress Toward Elimination. *Clin Infect Dis*. 2019;69:2218-27.
[[PubMed Abstract](#)] -
14. Yehia BR, Schranz AJ, Umscheid CA, Lo Re V 3rd. The treatment cascade for chronic hepatitis C virus infection in the United States: a systematic review and meta-analysis. *PLoS One*. 2014;9:e101554.
[[PubMed Abstract](#)] -
15. Chhatwal J, Chen Q, Bethea ED, Hur C, Spaulding AC, Kanwal F. The impact of direct-acting anti-virals on the hepatitis C care cascade: identifying progress and gaps towards hepatitis C elimination in the United States. *Aliment Pharmacol Ther*. 2019;50:66-74.
[[PubMed Abstract](#)] -
16. Zou B, Yeo YH, Le MH, et al. Prevalence of Viremic Hepatitis C Virus Infection by Age, Race/Ethnicity, and Birthplace and Disease Awareness Among Viremic Persons in the United States, 1999-2016. *J Infect Dis*. 2020;221:408-18.
[[PubMed Abstract](#)] -
17. Denkinger CM, Kessel M. Diagnostics for hepatitis C: an urgent need for action. *Lancet Glob Health*. 2015;3:e195.
[[PubMed Abstract](#)] -
18. Schillie S, Wester C, Osborne M, Wesolowski L, Ryerson AB. CDC Recommendations for Hepatitis C Screening Among Adults - United States, 2020. *MMWR Recomm Rep*. 2020;69:1-17.
[[PubMed Abstract](#)] -
19. AASLD-IDSA. HCV Guidance: Recommendations for testing, management, and treating hepatitis C. HCV testing and linkage to care.
[[AASLD-IDSA Hepatitis C Guidance](#)] -
20. Chou R, Dana T, Fu R, et al. Screening for Hepatitis C Virus Infection in Adolescents and Adults: Updated Evidence Report and Systematic Review for the US Preventive Services Task Force. *JAMA*. 2020;323:1318.
[[PubMed Abstract](#)] -
21. Coyle C, Kwakwa H, Viner K. Integrating Routine HCV Testing in Primary Care: Lessons Learned from Five Federally Qualified Health Centers in Philadelphia, Pennsylvania, 2012-2014. *Public Health Rep*. 2016;131 Suppl 2:65-73.
[[PubMed Abstract](#)] -
22. Coyle C, Kwakwa H. Dual-Routine HCV/HIV Testing: Seroprevalence and Linkage to Care in Four Community Health Centers in Philadelphia, Pennsylvania. *Public Health Rep*. 2016;131 Suppl 1:41-52.
[[PubMed Abstract](#)] -
23. Fleurence RL, Collins FS. A National Hepatitis C Elimination Program in the United States: A Historic Opportunity. *JAMA*. 2023;329:1251-2.
[[PubMed Abstract](#)] -
24. Falade-Nwulia O, Mehta S, Sulkowski M, Lasola J, Ghanem K, Chaulk P, Thomas D. Impact of Rapid hepatitis C testing on receipt of hepatitis C results in a public STD clinic. Program and abstracts of the 21st Conference on Retroviruses and Opportunistic Infections; March 3-6, 2014; Boston, Massachusetts. Abstract Number 631.
[[CROI](#)] -

25. Frimpong JA, Shiu-Yee K, Tross S, et al. Bundling Rapid Human Immunodeficiency Virus and Hepatitis C Virus Testing to Increase Receipt of Test Results: A Randomized Trial. *Med Care*. 2020;58:445-52. [\[PubMed Abstract\]](#) -
26. Burrell CN, Sharon MJ, Davis S, et al. Using the electronic medical record to increase testing for HIV and hepatitis C virus in an Appalachian emergency department. *BMC Health Serv Res*. 2021;21:524. [\[PubMed Abstract\]](#) -
27. Hack B, Sanghavi K, Gundapaneni S, et al. HCV universal EHR prompt successfully increases screening, highlights potential disparities. *PLoS One*. 2023;18:e0279972. [\[PubMed Abstract\]](#) -
28. Mehta SJ, Torgersen J, Small DS, et al. Effect of a Default Order vs an Alert in the Electronic Health Record on Hepatitis C Virus Screening Among Hospitalized Patients: A Stepped-Wedge Randomized Clinical Trial. *JAMA Netw Open*. 2022;5:e222427. [\[PubMed Abstract\]](#) -
29. Jordan AE, Perlman DC, Reed J, Smith DJ, Hagan H. Patterns and Gaps Identified in a Systematic Review of the Hepatitis C Virus Care Continuum in Studies among People Who Use Drugs. *Front Public Health*. 2017;5:348. [\[PubMed Abstract\]](#) -
30. Falade-Nwulia O, Gicquelais RE, Astemborski J, et al. Hepatitis C treatment uptake among people who inject drugs in the oral direct-acting antiviral era. *Liver Int*. 2020;40:2407-16. [\[PubMed Abstract\]](#) -
31. Jordan AE, Cleland CM, Schackman BR, Wyka K, Perlman DC, Nash D. Hepatitis C Virus (HCV) Care Continuum Outcomes and HCV Community Viral Loads Among Patients in an Opioid Treatment Program. *J Infect Dis*. 2020;222:S335-S345. [\[PubMed Abstract\]](#) -
32. Litwin AH, Drolet M, Nwankwo C, et al. Perceived barriers related to testing, management and treatment of HCV infection among physicians prescribing opioid agonist therapy: The C-SCOPE Study. *J Viral Hepat*. 2019;26:1094-1104. [\[PubMed Abstract\]](#) -
33. Hunt BR, Ahmed C, Ramirez-Mercado K, Patron C, Glick NR. Routine Screening and Linkage to Care for Hepatitis C Virus in an Urban Safety-Net Health System, 2017-2019. *Public Health Rep*. 2021;136:219-27. [\[PubMed Abstract\]](#) -
34. Strebe J, Rich NE, Wang L, et al. Patient Navigation Increases Linkage to Care and Receipt of Direct-acting Antiviral Therapy in Patients with Hepatitis C. *Clin Gastroenterol Hepatol*. 2023;21:988-94.e2. [\[PubMed Abstract\]](#) -
35. Litwin AH, Lum PJ, Taylor LE, et al. Patient-centred models of hepatitis C treatment for people who inject drugs: a multicentre, pragmatic randomised trial. *Lancet Gastroenterol Hepatol*. 2022;7:1112-27. [\[PubMed Abstract\]](#) -
36. Sherbuk JE, McManus KA, Kemp Knick T, Canan CE, Flickinger T, Dillingham R. Disparities in Hepatitis C Linkage to Care in the Direct Acting Antiviral Era: Findings From a Referral Clinic With an Embedded Nurse Navigator Model. *Front Public Health*. 2019;7:362.

[\[PubMed Abstract\]](#) -

37. Henderson C, Madden A, Kelsall J. 'Beyond the willing & the waiting' - The role of peer-based approaches in hepatitis C diagnosis & treatment. *Int J Drug Policy*. 2017;50:111-5.
[\[PubMed Abstract\]](#) -
38. Stagg HR, Surey J, Francis M, et al. Improving engagement with healthcare in hepatitis C: a randomised controlled trial of a peer support intervention. *BMC Med*. 2019;17:71.
[\[PubMed Abstract\]](#) -
39. Norton BL, Bachhuber MA, Singh R, et al. Evaluation of contingency management as a strategy to improve HCV linkage to care and treatment in persons attending needle and syringe programs: A pilot study. *Int J Drug Policy*. 2019;69:1-7.
[\[PubMed Abstract\]](#) -
40. AASLD-IDSA. HCV Guidance: Recommendations for testing, management, and treating hepatitis C. When and in whom to initiate HCV therapy.
[\[AASLD-IDSA Hepatitis C Guidance\]](#) -
41. AASLD-IDSA. HCV Guidance: Recommendations for testing, management, and treating hepatitis C. Simplified HCV Treatment for Treatment-Naive Adults With Compensated Cirrhosis.
[\[AASLD-IDSA Hepatitis C Guidance\]](#) -
42. AASLD-IDSA. HCV Guidance: Recommendations for testing, management, and treating hepatitis C. Simplified HCV Treatment for Treatment-Naive Adults Without Cirrhosis.
[\[AASLD-IDSA Hepatitis C Guidance\]](#) -
43. Kattakuzhy S, Gross C, Emmanuel B, et al. Expansion of Treatment for Hepatitis C Virus Infection by Task Shifting to Community-Based Nonspecialist Providers: A Nonrandomized Clinical Trial. *Ann Intern Med*. 2017;167:311-318.
[\[PubMed Abstract\]](#) -
44. Radley A, de Bruin M, Inglis SK, et al. Clinical effectiveness of pharmacist-led versus conventionally delivered antiviral treatment for hepatitis C virus in patients receiving opioid substitution therapy: a pragmatic, cluster-randomised trial. *Lancet Gastroenterol Hepatol*. 2020;5:809-18.
[\[PubMed Abstract\]](#) -
45. Overton K, Clegg J, Pekin F, et al. Outcomes of a nurse-led model of care for hepatitis C assessment and treatment with direct-acting antivirals in the custodial setting. *Int J Drug Policy*. 2019;72:123-8.
[\[PubMed Abstract\]](#) -
46. Arora S, Thornton K, Murata G, et al. Outcomes of treatment for hepatitis C virus infection by primary care providers. *N Engl J Med*. 2011;364:2199-207.
[\[PubMed Abstract\]](#) -
47. Beste LA, Glorioso TJ, Ho PM, et al. Telemedicine Specialty Support Promotes Hepatitis C Treatment by Primary Care Providers in the Department of Veterans Affairs. *Am J Med*. 2017;130:432-438.e3.
[\[PubMed Abstract\]](#) -
48. Irvin R, Ntiri-Reid B, Kleinman M, et al. Sharing the cure: Building primary care and public health infrastructure to improve the hepatitis C care continuum in Maryland. *J Viral Hepat*. 2020;27:1388-95.
[\[PubMed Abstract\]](#) -
49. Scott JD, Unruh KT, Catlin MC, et al. Project ECHO: a model for complex, chronic care in the Pacific

Northwest region of the United States. J Telemed Telecare. 2012;18:481-4.

[\[PubMed Abstract\]](#) -

50. Facente SN, Burk K, Eagen K, Mara ES, Smith AA, Lynch CS. New Treatments Have Changed the Game: Hepatitis C Treatment in Primary Care. Infect Dis Clin North Am. 2018;32:313-22.
[\[PubMed Abstract\]](#) -
51. Taylor JL, Johnson S, Cruz R, Gray JR, Schiff D, Bagley SM. Integrating Harm Reduction into Outpatient Opioid Use Disorder Treatment Settings : Harm Reduction in Outpatient Addiction Treatment. J Gen Intern Med. 2021;36:3810-19.
[\[PubMed Abstract\]](#) -
52. Javanbakht M, Archer R, Klausner J. Will prior health insurance authorization for medications continue to hinder hepatitis C treatment delivery in the United States? Perspectives from hepatitis C treatment providers in a large urban healthcare system. PLoS One. 2020;15:e0241615.
[\[PubMed Abstract\]](#) -
53. Lo Re V 3rd, Gowda C, Urick PN, et al. Disparities in Absolute Denial of Modern Hepatitis C Therapy by Type of Insurance. Clin Gastroenterol Hepatol. 2016;14:1035-43.
[\[PubMed Abstract\]](#) -
54. Gowda C, Lott S, Grigorian M, et al. Absolute Insurer Denial of Direct-Acting Antiviral Therapy for Hepatitis C: A National Specialty Pharmacy Cohort Study. Open Forum Infect Dis. 2018;5:ofy076.
[\[PubMed Abstract\]](#) -
55. Canary LA, Klevens RM, Holmberg SD. Limited Access to New Hepatitis C Virus Treatment Under State Medicaid Programs. Ann Intern Med. 2015;163:226-8.
[\[PubMed Abstract\]](#) -
56. Rosecrans AM, Cheedalla A, Rives ST, et al. Public Health Clinic-Based Hepatitis C Treatment. Am J Prev Med. 2020;59:420-7.
[\[PubMed Abstract\]](#) -
57. Saeed S, Strumpf E, Moodie EEM, et al. Eliminating Structural Barriers: The Impact of Unrestricted Access on Hepatitis C Treatment Uptake Among People Living With Human Immunodeficiency Virus. Clin Infect Dis. 2020;71:363-71.
[\[PubMed Abstract\]](#) -
58. Dore GJ, Altice F, Litwin AH, et al. Elbasvir-Grazoprevir to Treat Hepatitis C Virus Infection in Persons Receiving Opioid Agonist Therapy: A Randomized Trial. Ann Intern Med. 2016;165:625-634.
[\[PubMed Abstract\]](#) -
59. Grebely J, Dalgard O, Conway B, et al. Sofosbuvir and velpatasvir for hepatitis C virus infection in people with recent injection drug use (SIMPLIFY): an open-label, single-arm, phase 4, multicentre trial. Lancet Gastroenterol Hepatol. 2018;3:153-61.
[\[PubMed Abstract\]](#) -
60. Martin NK, Vickerman P, Dore GJ, Hickman M. The hepatitis C virus epidemics in key populations (including people who inject drugs, prisoners and MSM): the use of direct-acting antivirals as treatment for prevention. Curr Opin HIV AIDS. 2015;10:374-80.
[\[PubMed Abstract\]](#) -
61. Sood N, Ung D, Shankar A, Strom BL. A Novel Strategy for Increasing Access to Treatment for Hepatitis C Virus Infection for Medicaid Beneficiaries. Ann Intern Med. 2018;169:118-9.

[\[PubMed Abstract\]](#) -

62. National Viral Hepatitis Roundtable (NVHR) and the Center for Health Law and Policy Innovation of Harvard Law School (CHLPI). Hepatitis C: The State of Medicaid Access. Preliminary Findings: National Summary Report. November 14, 2016.

[\[NVHR & CHPI\]](#) -

References

- AASLD-IDSA. HCV Guidance: Recommendations for testing, management, and treating hepatitis C. Overview of cost, reimbursement, and cost-effectiveness considerations for hepatitis C treatment regimens.
[\[AASLD-IDSA Hepatitis C Guidance\]](#) -
- Barua S, Greenwald R, Grebely J, Dore GJ, Swan T, Taylor LE. Restrictions for medicaid reimbursement of sofosbuvir for the treatment of hepatitis C virus infection in the United States. *Ann Intern Med.* 2015;163:215-23.
[\[PubMed Abstract\]](#) -
- Buti M, Domínguez-Hernández R, Oyagüez I, Casado MA, Esteban R. Cost-effectiveness analysis of ledipasvir/sofosbuvir in patients with chronic hepatitis C: Treatment of patients with absence or mild fibrosis compared to patients with advanced fibrosis. *J Viral Hepat.* 2017;24:750-758.
[\[PubMed Abstract\]](#) -
- Chahal HS, Marseille EA, Tice JA, et al. Cost-effectiveness of Early Treatment of Hepatitis C Virus Genotype 1 by Stage of Liver Fibrosis in a US Treatment-Naive Population. *JAMA Intern Med.* 2016;176:65-73.
[\[PubMed Abstract\]](#) -
- Chhatwal J, He T, Hur C, Lopez-Olivo MA. Direct-Acting Antiviral Agents for Patients With Hepatitis C Virus Genotype 1 Infection Are Cost-Saving. *Clin Gastroenterol Hepatol.* 2017;15:827-837.e8.
[\[PubMed Abstract\]](#) -
- Chhatwal J, He T, Lopez-Olivo MA. Systematic Review of Modelling Approaches for the Cost Effectiveness of Hepatitis C Treatment with Direct-Acting Antivirals. *Pharmacoeconomics.* 2016;34:551-67.
[\[PubMed Abstract\]](#) -
- Chhatwal J, Kanwal F, Roberts MS, Dunn MA. Cost-effectiveness and budget impact of hepatitis C virus treatment with sofosbuvir and ledipasvir in the United States. *Ann Intern Med.* 2015;162:397-406.
[\[PubMed Abstract\]](#) -
- Chidi AP, Rogal S, Bryce CL, et al. Cost-effectiveness of new antiviral regimens for treatment-naïve U.S. veterans with hepatitis C. *Hepatology.* 2016;63:428-36.
[\[PubMed Abstract\]](#) -
- Falade-Nwulia O, Mehta SH, Lasola J, et al. Public health clinic-based hepatitis C testing and linkage to care in Baltimore. *J Viral Hepat.* 2016;23:366-74.
[\[PubMed Abstract\]](#) -
- Falade-Nwulia O, Momoh O, Felsher M, et al. Validation of a tool to assess effectiveness of peer-recruitment for hepatitis C testing and linkage to care among people who inject drugs. *Drug Alcohol Depend.* 2021;230:109177.

[\[PubMed Abstract\]](#) -

- Geboy AG, Nichols WL, Fernandez SJ, Desale S, Basch P, Fishbein DA. Leveraging the electronic health record to eliminate hepatitis C: Screening in a large integrated healthcare system. PLoS One. 2019;14:e0216459.
[\[PubMed Abstract\]](#) -
- Hagan LM, Sulkowski MS, Schinazi RF. Cost analysis of sofosbuvir/ribavirin versus sofosbuvir/simeprevir for genotype 1 hepatitis C virus in interferon-ineligible/intolerant individuals. Hepatology. 2014;60:37-45.
[\[PubMed Abstract\]](#) -
- He T, Lopez-Olivo MA, Hur C, Chhatwal J. Systematic review: cost-effectiveness of direct-acting antivirals for treatment of hepatitis C genotypes 2-6. Aliment Pharmacol Ther. 2017;46:711-721.
[\[PubMed Abstract\]](#) -
- Hill A, Khoo S, Fortunak J, Simmons B, Ford N. Minimum costs for producing hepatitis C direct-acting antivirals for use in large-scale treatment access programs in developing countries. Clin Infect Dis. 2014;58:928-36.
[\[PubMed Abstract\]](#) -
- Holmberg SD, Spradling PR, Moorman AC, Denniston MM. Hepatitis C in the United States. N Engl J Med. 2013;368:1859-61.
[\[PubMed Abstract\]](#) -
- Iyengar S, Tay-Teo K, Vogler S, et al. Prices, Costs, and Affordability of New Medicines for Hepatitis C in 30 Countries: An Economic Analysis. PLoS Med. 2016;13:e1002032.
[\[PubMed Abstract\]](#) -
- Leidner AJ, Chesson HW, Xu F, Ward JW, Spradling PR, Holmberg SD. Cost-effectiveness of hepatitis C treatment for patients in early stages of liver disease. Hepatology. 2015;61:1860-9.
[\[PubMed Abstract\]](#) -
- Linas BP, Morgan JR, Pho MT, et al. Cost Effectiveness and Cost Containment in the Era of Interferon-Free Therapies to Treat Hepatitis C Virus Genotype 1. Open Forum Infect Dis. 2017;4:ofw266.
[\[PubMed Abstract\]](#) -
- Maier MM, Ross DB, Chartier M, Belperio PS, Backus LI. Cascade of Care for Hepatitis C Virus Infection Within the US Veterans Health Administration. Am J Public Health. 2016;106:353-8.
[\[PubMed Abstract\]](#) -
- Martin NK, Vickerman P, Dore GJ, et al. Prioritization of HCV treatment in the direct-acting antiviral era: An economic evaluation. J Hepatol. 2016;65:17-25.
[\[PubMed Abstract\]](#) -
- Mattingly TJ 2nd, Slejko JF, Mullins CD. Hepatitis C Treatment Regimens Are Cost-Effective: But Compared With What? Ann Pharmacother. 2017;51:961-9.
[\[PubMed Abstract\]](#) -
- Najafzadeh M, Andersson K, Shrank WH, et al. Cost-effectiveness of novel regimens for the treatment of hepatitis C virus. Ann Intern Med. 2015;162:407-19.
[\[PubMed Abstract\]](#) -
- Rein DB, Wittenborn JS, Smith BD, Liffmann DK, Ward JW. The cost-effectiveness, health benefits, and

financial costs of new antiviral treatments for hepatitis C virus. Clin Infect Dis. 2015;61:157-68.
[\[PubMed Abstract\]](#) -

- Rosenthal ES, Graham CS. Price and affordability of direct-acting antiviral regimens for hepatitis C virus in the United States. Infect Agent Cancer. 2016;11:24.
[\[PubMed Abstract\]](#) -
- Saab S, Gordon SC, Park H, Sulkowski M, Ahmed A, Younossi Z. Cost-effectiveness analysis of sofosbuvir plus peginterferon/ribavirin in the treatment of chronic hepatitis C virus genotype 1 infection. Aliment Pharmacol Ther. 2014;40:657-75.
[\[PubMed Abstract\]](#) -
- Saag MS. Editorial commentary: getting smart in how we pay for HCV drugs: KAOS vs CONTROL. Clin Infect Dis. 2015 Mar 16;61:169-70.
[\[PubMed Abstract\]](#) -
- Saint-Laurent Thibault C, Moorjaney D, Ganz ML, et al. Cost-effectiveness of combination daclatasvir-sofosbuvir for treatment of genotype 3 chronic hepatitis C infection in the United States. J Med Econ. 2017;20:692-702.
[\[PubMed Abstract\]](#) -
- Scott J, Fagalde M, Baer A, et al. A Population-Based Intervention to Improve Care Cascades of Patients With Hepatitis C Virus Infection. Hepatol Commun. 2021;5:387-9.
[\[PubMed Abstract\]](#) -
- Sethi N, Tapper EB, Vong A, Sethi S, Rourke M, Afdhal NH. Direct costs of first-generation protease inhibitors for the treatment of genotype 1 chronic hepatitis C viral infection. J Viral Hepat. 2015;22:974-6.
[\[PubMed Abstract\]](#) -
- Tice JA, Chahal HS, Ollendorf DA. Comparative Clinical Effectiveness and Value of Novel Interferon-Free Combination Therapy for Hepatitis C Genotype 1: Summary of California Technology Assessment Forum Report. JAMA Intern Med. 2015;175:1559-60.
[\[PubMed Abstract\]](#) -
- Trooskin SB, Poceta J, Towey CM, et al. Results from a Geographically Focused, Community-Based HCV Screening, Linkage-to-Care and Patient Navigation Program. J Gen Intern Med. 2015;30:950-7.
[\[PubMed Abstract\]](#) -
- Trooskin SB, Reynolds H, Kostman JR. Access to Costly New Hepatitis C Drugs: Medicine, Money, and Advocacy. Clin Infect Dis. 2015;61:1825-30.
[\[PubMed Abstract\]](#) -
- US Preventive Services Task Force, Owens DK, Davidson KW, et al. Screening for Hepatitis C Virus Infection in Adolescents and Adults: US Preventive Services Task Force Recommendation Statement. JAMA. 2020;323:970-5.
[\[PubMed Abstract\]](#) -
- Viner K, Kuncio D, Newbern EC, Johnson CC. The continuum of hepatitis C testing and care. Hepatology. 2015;61:783-9.
[\[PubMed Abstract\]](#) -
- World Health Organization. Global health sector strategy on viral hepatitis 2016-2021. Towards ending viral hepatitis. World Health Organization. June 2016:1-53.

[\[WHO\]](#) -

Figures

Figure 1 CDC Division of Viral Hepatitis 2025 Strategic Plan for Hepatitis C

Abbreviations: HCV = hepatitis C virus; PWID = persons who inject drugs

Source: Centers for Disease Control and Prevention (CDC). Division of Viral Hepatitis 2025 Strategic Plan, CDC; 2020:1-22.

<i>Viral Hepatitis Strategic Plan 2025</i>			
Baseline, 2025, and 2030 Goals for Hepatitis C Virus Infection			
Category	Baseline (2017)	2025 Goal	2030 Goal
Acute HCV Infections	44,700	≤35,000 (↓22%)	≤4,400 (↓90%)
HCV-related Death (rate*)	4.13	≤3.00 (↓27%)	≤1.44 (↓65%)
New HCV in PWID (rate*)	2.3	≤1.7 (↓26%)	≤0.2 (↓90%)
HCV Clearance (%)	43% (2013-2016)	≥58% (↑35%) (2021-2024)	≥80% (↑86%) (2025-2028)
*Rates are per 100,000 population 2025 goals are based on 2023 data, and 2030 goals are based on 2028 data			

Figure 2 HCV Care Continuum

Abbreviations: DAA = direct-acting antiviral

This figure shows the five major stages of the HCV care continuum (colored circles), and the specific actions involved (arrows) to move individuals along the continuum.

Illustration: David H. Spach, MD

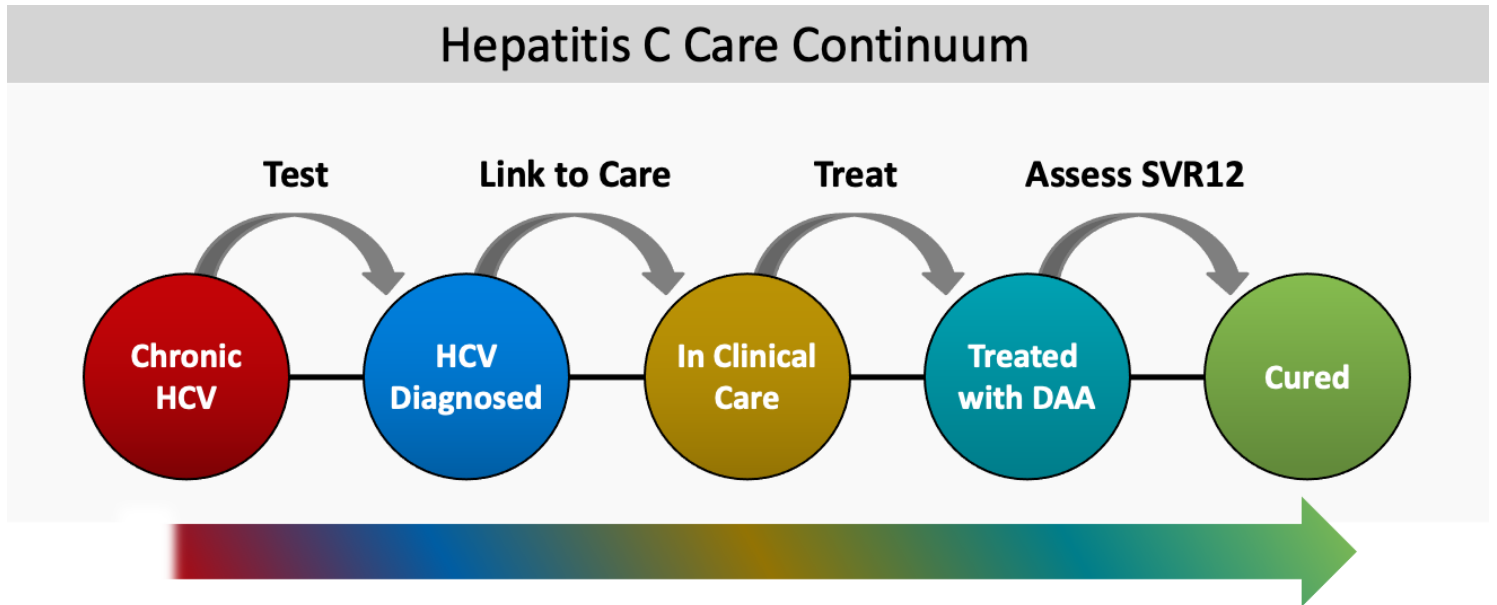


Figure 3 Treatment Cascade for People with HCV in the United States in the Pre-DAA Era

This treatment cascade is modeled based on studies from 2003-2013 (prior to the widespread use of direct-acting antiviral [DAA] medications).

Source: Yehia BR, Schranz AJ, Umscheid CA, Lo Re V 3rd. The treatment cascade for chronic hepatitis C virus infection in the United States: a systematic review and meta-analysis. PLoS One. 2014;9:e101554.

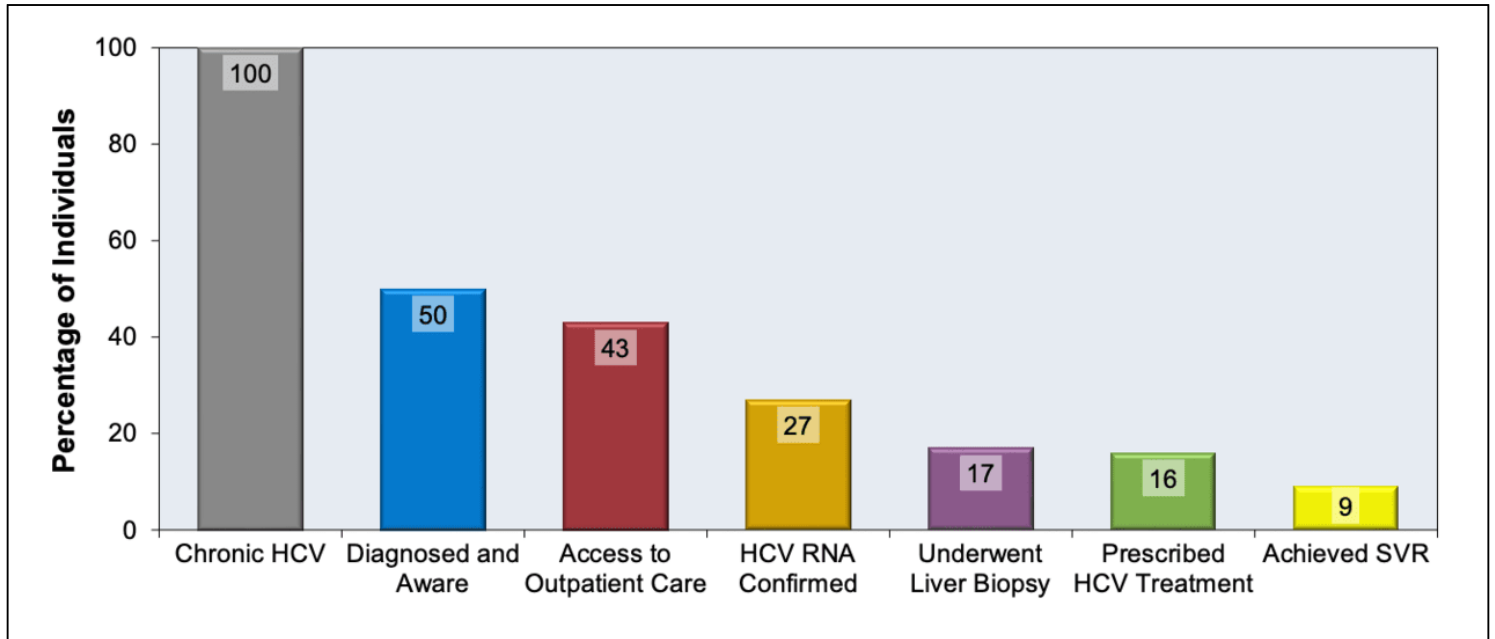


Figure 4 Treatment Cascade for People with Chronic HCV in the United States, 2018

Source: Chhatwal J, Chen Q, Bethea ED, Hur C, Spaulding AC, Kanwal F. The impact of direct-acting anti-virals on the hepatitis C care cascade: identifying progress and gaps towards hepatitis C elimination in the United States. *Aliment Pharmacol Ther.* 2019;50:66-74.

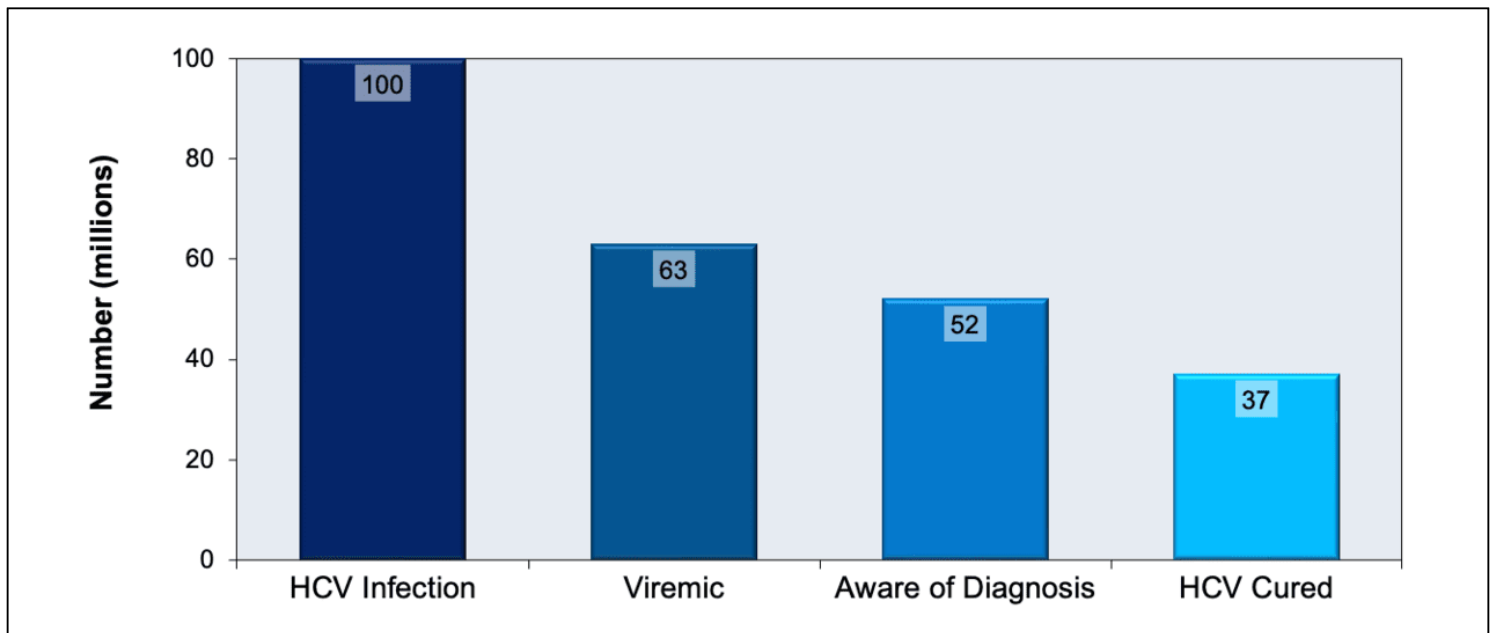


Table 1.
CDC Recommendations for Hepatitis C Screening Among Adults – United States
Persons Recommended for Screening
<p>Universal hepatitis C screening:</p> <ul style="list-style-type: none"> • Hepatitis C screening at least once in a lifetime for all adults aged ≥ 18 years, except in settings where the prevalence of HCV infection (HCV RNA-positivity) is $< 0.1\%$ • Hepatitis C screening for all pregnant women during each pregnancy, except in settings where the prevalence of HCV infection (HCV RNA-positivity) is $< 0.1\%$
<p>One-time hepatitis C testing regardless of age or setting prevalence among persons with recognized risk factors or exposures:</p> <ul style="list-style-type: none"> • Persons with HIV • Persons who ever injected drugs and shared needles, syringes, or other drug preparation equipment, including those who injected once or a few times many years ago • Persons with selected medical conditions, including persons who ever received maintenance hemodialysis and persons with persistently abnormal alanine aminotransferase (ALT) levels • Prior recipients of transfusions or organ transplants, including persons who received clotting factor concentrates produced before 1987, persons who received a transfusion of blood or blood components before July 1992, persons who received an organ transplant before July 1992, and persons who were notified that they received blood from a donor who later tested positive for HCV infection • Health care, emergency medical, and public safety personnel after needlesticks, sharps, or mucosal exposures to HCV-positive blood • Children born to mothers with HCV infection
<p>Routine periodic testing for persons with ongoing risk factors, while risk factors persist:</p> <ul style="list-style-type: none"> • Persons who currently inject drugs and share needles, syringes, or other drug preparation equipment • Persons with selected medical conditions, including persons who ever received maintenance hemodialysis
<p>Any person who requests hepatitis C testing should receive it, regardless of disclosure of risk, because many persons might be reluctant to disclose stigmatizing risks</p>

Source:

- Schillie S, Wester C, Osborne M, Wesolowski L, Ryerson AB. CDC Recommendations for Hepatitis C Screening Among Adults - United States, 2020. MMWR Recomm Rep. 2020;69:1-17. [[PubMed Abstract](#)]

