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Hepatitis C Virus Elimination Programs in Louisiana and Washington: Importance of Screening and Surveillance Systems

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ABSTRACT
The US government has established a national goal of hepatitis C virus (HCV) elimination by 2030. To date, most HCV elimination planning and activity have been at the state level. Fifteen states presently have publicly available HCV elimination plans. In 2019, Louisiana and Washington were the first states to initiate 5-year funded HCV elimination programs. These states differ on motivation for pursuing HCV elimination and ranking on several indicators. Simultaneously, however, they have emphasized several similar elimination components including HCV screening promotion through public awareness, screening expansion, surveillance enhancement (including electronic reporting and task force development), and harm reduction. The 13 other states with published elimination plans have proposed the majority of the elements identified by Louisiana and Washington, but several have notable gaps. Louisiana's and Washington's comprehensive plans, funding approaches, and programs provide a useful framework that can move states and the nation toward HCV elimination.

KEY WORDS: elimination, hepatitis C, screening, surveillance

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An estimated 3.5 million individuals in the United States (US) are chronically infected with hepatitis C virus (HCV), a leading cause of cirrhosis, hepatocellular carcinoma, and liver transplantation.[1] The advent of direct-acting antivirals, a safe, well-tolerated, and nearly universal HCV cure has prompted the US government to aim for HCV elimination by 2030. The Viral Hepatitis National Strategic Plan targets 90% diagnosis of prevalent cases, 80% incidence reduction, 80% treatment uptake, and 65% attributable mortality reduction.[1] For the first time, HCV elimination is part of the President's budget request to Congress.[2]

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Major threats to HCV elimination remain, including rising HCV incidence intensified by the opioid crisis, primarily among individuals aged 20 to 39 years,[3] and state and payer restrictions impeding testing and treatment.[4,5] We discuss the elements of the programs in Louisiana and Washington, the first 2 states to actively pursue HCV elimination with 5-year funded programs launched in 2019. We also briefly note 13 additional states with publicly available HCV elimination plans that emphasize similar foundational components.

Rationale for HCV Screening Expansion and Surveillance Enhancement

HCV epidemiology poses unique challenges. Because acute infection is largely asymptomatic, relatively few individuals seek care and even fewer receive a diagnosis that triggers reporting. The estimated HCV incidence is 13.9 times higher than the number of cases reported.[6,7] Chronic HCV prevalence estimates are based on self-report and are limited by lack of representation of high-risk groups (ie, people who use drugs, incarcerated and unhoused individuals, and people living on American Indian reservations), which results in HCV prevalence underestimation.

The US Preventive Services Task Force and the Centers for Disease Control and Prevention (CDC), in 2020, expanded HCV screening recommendations to once in a lifetime for all adults, pregnant women with each pregnancy, and routine screening of high-risk groups.[8] Universal screening can destigmatize testing and has been combined in some jurisdictions with universal treatment access, a cornerstone concept of HCV elimination.[9] In underfunded jurisdictions, however, targeted testing remains an important elimination approach (see Supplemental Digital Content Figure 1, available at http://links.lww.com/JPHMP/B219). Despite these interventions, HCV surveillance remains a laborious process of case investigation, de-duplication, and ascertainment based upon symptoms, serology, and RNA testing.[10] This model is challenging for health departments with limited infrastructure to address large case volumes. Enhanced surveillance requires robust real-time tracking,[2] potentially through expansion of electronic case reporting within interoperable health care data systems. Automated system reporting is also key to evaluating and providing feedback to HCV elimination programs. Effective surveillance that monitors treatment outcomes of large cohorts as they proceed through HCV care is also essential for elimination.

Advanced Elimination Programs: Louisiana and Washington

We examined the elimination plans and programs in Louisiana and Washington. As the first states to initiate 5-year funded HCV elimination programs in 2019, their efforts are at relatively advanced stages.

Financing elimination activities

Both states employed innovative payment (subscription) models, in which the state contracts with pharmaceutical manufacturers for unlimited supplies of HCV medication for a maximum annual expenditure. In this model, all parties seek to maximize medication distribution.

Louisiana instituted an "expenditure cap" in which it purchases medications at a discounted rate until the cap is reached. Above the cap, Louisiana is entitled to an unlimited quantity of medications. The total expenditure was set at approximately the cost for HCV medications in 2018, the year prior to program initiation. The program includes incarcerated individuals, who were previously unable to access HCV medications, and Medicaid recipients. Louisiana had previously expanded Medicaid in 2016, and it removed HCV medication prior authorization requirements for these individuals in 2019 when the elimination program started.[4,5]

Washington sought a value-based state plan as an amendment that required approval from the federal government to permit negotiation of discounted HCV medication rates with a manufacturer. In contrast to volume purchasing in Louisiana, value-based purchasing relies on drug effectiveness and bases negotiations on utilization periods and outcome-based benchmarks. Washington leveraged a prescription drug program enacted in 2003 that consolidated state agencies under one prescription drug consortium, negotiating 2 separate 5-year arrangements, one for Medicaid-insured individuals and another for non–Medicaid-insured that included state employees and incarcerated individuals. HCV medications are provided at a discounted rate up to an annual utilization threshold; above that limit, additional prescription costs are nominal. Similar to Louisiana, the state had already expanded Medicaid in 2014, although it had removed HCV medication prior authorization requirements in 2016. Although the funding details differ between these states' elimination programs, the resources they provided enabled states to jump-start their respective HCV elimination programs.[4,5,9]

Program components

Public awareness, screening expansion, surveillance enhancement, and harm reduction are core components of Louisiana's and Washington's elimination programs (Table).[11-13]

1. *Promotion of public awareness about HCV screening* via outreach campaigns, focus groups, and community involvement to formulate best practices for patient engagement, communication strategies, understanding stigma, and service delivery.
2. *Expansion of HCV screening* by partnering with the Centers for Medicare & Medicaid Services, departments of corrections, opioid treatment programs, syringe services programs, and primary care providers.
3. *Enhancement of HCV surveillance* by upgrading technology, automating reporting, and developing task forces. Both states mandate manual and laboratory reporting of acute and chronic cases, positive and negative antibody and RNA results to track cases, spontaneous clearance, and curative treatment; they define a case as a positive HCV RNA test or a documented negative HCV antibody test, followed by seroconversion within 12 months.[11-13]
4. *Promotion of harm reduction* by expanding opioid treatment programs and syringe services programs statewide as well as utilizing patient navigators for linkage to care.

Targeted screening in priority sites is high yield and is critical in underfunded jurisdictions. Louisiana and Washington have partnered with their respective offices of behavioral health to expand screening in opioid treatment programs, syringe services programs, supervised injection facilities, detoxification centers, emergency departments, and homeless shelters.[12,13] Given the high HCV prevalence in correctional facilities, both states have partnered with their departments of corrections to enhance screening of incarcerated individuals.

State-specific considerations

The 2 states' programs are tailored to their very different sociodemographic and health care indicators. Washington ranks fourth nationally in overall health system performance.[14] As motivations for HCV elimination, Washington cites a 126% increase in HCV cases from 2013 to 2017, subsequently reaching a 20-year high in 2018, and increased expenditures for HCV care, including $114 million for hospitalizations from 2010 to 2014.[13] Regarding HCV as a statewide public health problem, Washington monitors surveillance data from an all-payer claims database, vital records, cancer, infectious diseases, and corrections registries.[13] Monitoring parameters consist of screening performance and treatment uptake rates with the goal of enhancing data completeness. For example, Seattle/King County has automated electronic data collection (tied to case management), developed de-duplication and de-identification algorithms to generate care cascades, determined screening performance and positivity trends, treatment rates, and implemented health equity interventions informed by these data.[15] The plan was to scale the system throughout Washington, while seeking to improve access to harm-reduction services, exemplified by a statewide network of syringe services programs. Washington's initial treatment approach was to address HCV among patients with preexisting provider relationships, especially colocating HCV screening in substance use treatment facilities. As of October 2022, Washington initiated HCV treatment for 5591 individuals.

Louisiana ranks 39th nationally in health system performance,[14] 49th in overall health, highest in incarcerated persons per capita, and 29% of residents are Medicaid enrollees.[11] Louisiana prioritizes HCV screening and surveillance among these populations (see Supplemental Digital Content Figure 2, available at http://links.lww.com/JPHMP/B220), monitoring screening performance at health care and correctional facilities and intervening in sites with testing deficits.[12] Automated reporting systems allow real-time transmission of positive and negative test results, which are crucial to understanding screening performance and HCV prevalence. Louisiana utilizes its HIV/STD task force to conduct HCV screening and surveillance.

From July 2019 through August 2022, Louisiana screened 17 561 incarcerated individuals (10 248 with a mobile phlebotomy team and 7313 at intake, release, or by provider request). A total of 1642 (9.4% of incarcerated individuals) had initiated treatment. Despite interruptions due to the COVID-19 pandemic and hurricanes, the monthly average number accessing treatment increased from 62 to 275 individuals.

Elimination Programs in Other States

Louisiana's and Washington's elimination programs can serve as elimination models for the other 13 states with publicly available elimination plans (Table). While these states include elements in the 4 major components covered by the Louisiana and Washington programs, several do not include certain elements, such as screening in tribal areas and emergency departments, electronic reporting of test results (including negative tests and reflex RNA testing).

TABLE

Components of State HCV Elimination Plans (as of January 2023)[a,b]

Jurisdiction	LA[1]	WA[2]	MD[3]	HI[4]	CA[5]	IN[6]	MI[7]	NY[8]	TX[9]	GA[10]	KY[11]	MO[12]	NC[13]	PA[14]	RI[15]
Year released	2019	2019	2019	2020	2021	2021	2021	2021	2021	2022	2022	2022	2022	2022	2022
Public awareness															
Outreach campaigns	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Culturally appropriate resources	■	√	√	√	√	√	√	√	■	√	√	√	√	√	√
Focus groups to address stigma	√	√	√	√	√	√	√	√	■	■	√	√	√	√	√
Screening expansion															
Primary care, Medicaid	√	√	√	√	√	√	√	√	√	■	√	√	√	√	√
ED, urgent care	√	■	√	■	√	√	√	√	■	■	√	■	√	√	√
OTP, SSP	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Homeless shelters	■	√	√	√	√	√	√	√	■	■	■	√	√	■	√
Correctional facilities	√	√	√	√	√	√	√	■	√	√	√	√	√	√	√
Tribal activities	■	√	■	■	√	■	√	■	■	■	■	■	√	■	■
Surveillance enhancement															
Health IT upgrade	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Electronic reporting	√	√	√	■	■	√	√	√	√	■	■	■	■	√	√
HCV RNA reflex testing	√	√	√	■	√	■	√	√	■	■	■	■	√	√	√
Negative tests reporting	√	√	√	■	√	■	√	√	■	√	■	■	■	√	■
Task force	√	√	■	√	√	√	√	√	√	√	√	√	√	√	√
Epidemiological studies	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Harm reduction															
OTP, SSP expansion	√	√	√	√	√	√	√	√	√	√	√	■	√	√	√
Patient navigation	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√

Abbreviations: ED, emergency department; HCV, hepatitis C virus; IT, information technology; OTP, opioid treatment program; SSP, syringe service provider.

[a] The 4 rows transcending the entire table (Public awareness, Screening expansion, Surveillance enhancement, and Harm reduction) are the core components of HCV elimination activities. "√" indicates that the particular attribute is mentioned by the individual state HCV elimination plan. Blackened squares indicate that the particular item is not included in the HCV elimination plan. Blue highlighted columns indicate 2 states, Louisiana and Washington, that are the most advanced in their elimination activities with funded 5-year plans, respectively, each initiated in 2019.

[b] State abbreviations and sources: [1] LA, Louisiana (louisianahealthhub.org/wp-content/uploads/2021/03/Eliminate_Hepatitis_C_State_Plan.pdf); [2] WA, Washington (doh.wa.gov/sites/default/files/legacy/Documents/Pubs/150nonDOH-HepCFreeWA-PlanJuly2019.pdf); [3] MD, Maryland (health.maryland.gov/phpa/OIDPCS/AVHPP/AVHPP Documents/2019MarylandHepatitisCStrategicPlan.pdf); [4] HI, Hawaii (app.box.com/s/05qzm5w759qa8in2e1aanwz0ldmq5by8); [5] CA, California (drive.google.com/file/d/1Eq76vCfrqavcYaKgRO_C1UhlzaquzrPi/view); [6] IN, Indiana (84960e9f-442f-453b-afe1-caef1c740d9a.filesusr.com/ugd/25f039_f2e672cd597148baa4a8f18257e9fdd6.pdf); [7] MI, Michigan (michigan.gov/-/media/Project/Websites/mdhhs/Folder4/Folder31/Folder331/MDHHS_State_Plan_on_Eliminating_HCV_Final_Draft.pdf?rev=4e5736570bd74138a9d4b6435bdc7dae); [8] NY, New York (health.ny.gov/diseases/communicable/hepatitis/hepatitis_c/docs/hepatitis_c_elimination_plan.pdf); [9] TX, Texas (dshs.texas.gov/sites/default/files/legislative/2022-Reports/2022-State-Plan-for-Hepatitis-C.pdf); [10] GA, Georgia (nastad.org/sites/default/files/2022-11/Georgia_Viral_Hepatitis_Elimination_Plan_2030.pdf); [11] KY, Kentucky (chfs.ky.gov/agencies/dph/dehp/idb/Documents/HepatitisCEliminationPlan.pdf); [12] MO, Missouri (health.mo.gov/living/healthcondiseases/communicable/hepatitisc/pdf/elimination-plan.pdf); [13] NC, North Carolina (epi.dph.ncdhhs.gov/cd/hepatitis/ViralHepatitisNorthCarolinaComprehensiveResponseRecommendations_2_18_2022.pdf); [14] PA, Pennsylvania (health.pa.gov/topics/Documents/Diseases and Conditions/PA Hep Elim Plan Mar 2022.pdf); [15] RI, Rhode Island (health.ri.gov/publications/actionplans/Hepatitis-C-RI-Strategic-Plan-2022.pdf).

Conclusion

Although HCV is nearly universally curable, action is needed to eliminate HCV in the United States by 2030. Public health underfunding has impeded progress in HCV control. Since 2019, Louisiana and Washington have funded HCV elimination programs, allowing universal HCV medication access. The states differ in demographics, health system performance, and program priorities, but they upgraded their screening and surveillance systems. A note of caution is that publicly available elimination plans among the 13 additional states may not necessarily translate into current or future activities. Louisiana's and Washington's systems are a bedrock for HCV elimination activities and provide excellent models and lessons learned for national HCV elimination planning and implementation.

Implications for Policy & Practice

- Screening and surveillance systems are cornerstones to address rising HCV incidence.
- Recommended screening activities include:
  - Destigmatizing HCV screening,
  - Performance measures, and
  - Targeted screening in high-yield settings.
- Recommended surveillance activities include:
  - Linking and merging external data sources and registries,
  - Automating laboratory real-time reporting of positive and negative test results with universal reporting requirements and clear case definitions,
  - Monitoring screening performance and detecting screening-deficit sites for corrective action, and
  - Identifying outbreaks and transmission networks, reporting treatment outcomes, and evaluating program metrics.
- Recommended implementation activities include:
  - Establishing treatment- and outbreak-focused task forces and
  - Promoting HCV education and harm reduction.
- Screening and surveillance systems implemented by Louisiana and Washington could be adapted and modified by other HCV elimination programs.
- The White House HCV elimination plan proposes to:
  - Expand screening, testing, treatment, prevention, and real-time monitoring,
  - Focus on high-risk populations,
  - Support universal screening,
  - Diversify and expedite test-and-treat services through mobile treatment, telehealth, primary care, community sites, and case managers, and
  - Promote awareness campaigns in affected communities, include leadership and collaboration between federal agencies addressing HCV.

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