



HCV Elimination in a Health Network Serving Indigenous Communities in Northern California

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United Indian Health Services, Inc. (UIHS) is a tribally owned and governed Indian Health Care Service serving nine tribes in Northern California. It serves approximately 10,000 patients in six clinic locations covering Humboldt and Del Norte counties, which combined geographically are about the size of Connecticut. Hepatitis C antibody prevalence is elevated in this region, with Humboldt County recording a prevalence rate of 5.3%, the highest in the state.¹ Nationwide, American Indians/Alaska Natives have more than double the national rate of hepatitis C virus (HCV)-related mortality.²

In 2016, the UIHS HCV program began out of sheer necessity because of a lack of referral options and a high HCV burden. With a single part-time nurse practitioner hepatologist in the region, demand for HCV treatment far exceeded supply, and the 5 to 7 hours of travel time to liver specialists in San Francisco was untenable for many patients. In 2016, the scale-up of local HCV treatment services began with a first phase of clinical training,

remote specialist support, and treatment initiation. This was followed by expanding screening services, creating an HCV case registry for the UIHS patient population, providing case management support for active HCV cases, and expanding community awareness through education campaigns.

Clinical training and guidance from hepatologists came from the University of California at San Francisco Extensions for Community Health Outcomes (ECHO), which had documented excellent outcomes for HCV treatment in primary care settings.³ In the first year of training, all cases were presented to UCSF ECHO hepatologists prior to the initiation of treatment. Local HCV services were centralized on a team consisting of a physician, nurse, and pharmacy technician. This team became a known local referral option for clinicians throughout the UIHS health system, as well as by self-referred patients who had seen flyers for the service in the local health newsletter or heard about treatment from others in the community.

Abbreviations: ECHO, Extensions for Community Health Outcomes; HCV, hepatitis C virus; UIHS, United Indian Health Services, Inc.

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In late 2016, the team gathered data on existing patients with HCV for a case registry. This was performed by nursing staff and required approximately 50 hours spread out over a 3-month period. To identify patients with HCV who were already in the system, the nurse searched purpose-of-visit diagnostic codes for hepatitis, laboratory records for positive HCV antibody screens or an RNA test, and confidential morbidity reports sent to the state as a reportable disease. This method of triangulating data proved valuable; although most patients were in all three databases, each data set also revealed a subset of unique patients. These patients were put into a specific HCV patient panel managed by the care team. All UIHS patients signed a consent for treatment, and case registry information was used for direct patient care. All data used in monitoring progress toward elimination were deidentified and used in aggregate to assure patient confidentiality.

The second phase entailed a scale-up of HCV services and setting elimination goals. The scale-up was across the board, comprising HCV screening, case management, and treatment. In November 2016, UIHS implemented a data-driven policy providing HCV screening for baby boomers (born 1945-1965); in March 2018, this policy was widened to include all patients 21 years of age and older. The policy was supported by a reminder in the electronic health record, with HCV antibody tests (reflexing to RNA confirmation) ordered by the medical assistant under a standing protocol. Case management services entailed supportive calls to educate patients on the efficacy and benefits of HCV treatment, as well as regular check-ins (every 3 months) with patients who were reluctant to initiate treatment due to concerns of stigma, cost of treatment, or perceptions of treatment side effects and eligibility.

The program has been able to greatly expand screening and treatment. In December 2015, UIHS had screened 517 (26%) of 1951 patients in the baby boomer birth cohort and 851 (21%) of 3986 patients ≥ 21 years of age. By December 2019, the number screened increased to 1433 (83%) of 1725 patients in the baby boomer birth cohort and 2876 (68%) of 4247 patients ≥ 21 years of age (see Fig. 1). Screenings identified 37 additional active HCV infections. In 2016, 16 patients initiated or completed HCV treatment and 173 active HCV cases were in need of treatment, a total of 8% active cases treated. By the end of 2019, the number of patients who initiated or completed treatment increased to 148 and 78 active HCV cases remain, a total of 65% active cases treated (see Fig. 2). Of 132 patients completing therapy, only one treatment failure has been recorded, but the patient was successfully cured with second-line therapy. A total of seven patients did not return for sustained virological response at 12 weeks visits and are categorized as defaulted, and two died of non-HCV-related causes.

The clinical team has expanded to include two additional physicians and nurses. In 2019, UIHS passed peak screening and treatment levels, with annual HCV tests and patients treated declining from the previous year. The local HCV care physicians now have sufficient experience to treat almost all patients without specialist guidance. Consultation with specialists via ECHO or the UCSF HCV Warmline continues to be needed for local clinical management of patients with HCV with decompensated cirrhosis, comorbid conditions, and other clinical quandaries. UIHS used existing staff for this project, which was financially supported through third-party reimbursements from medical visits, as well as HCV prescriptions at the UIHS pharmacy.

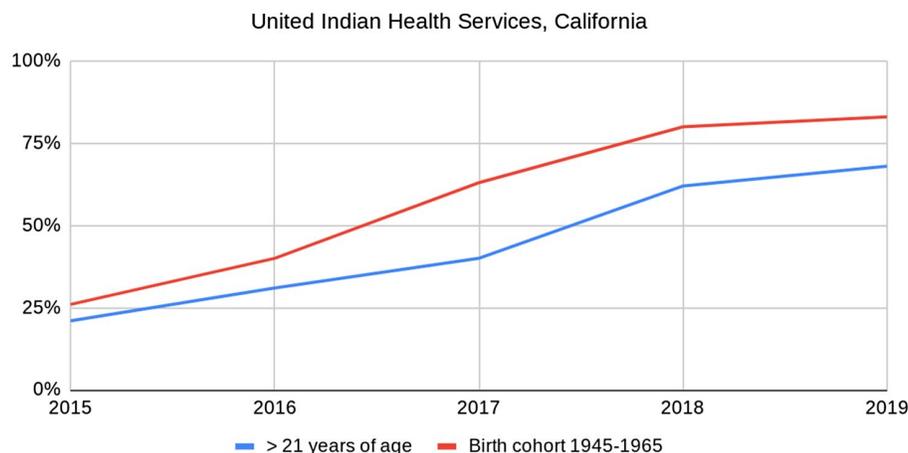


FIG 1 Proportion of patients screened for HCV, 2015-2019.

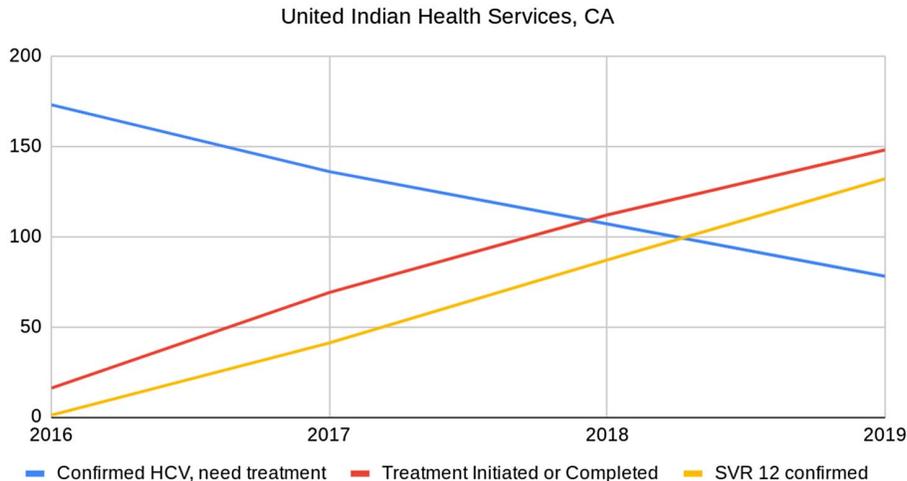


FIG 2 Patients with HCV, 2016-2019.

TABLE 1. KEY FACTORS FOR SUCCESS IN AN HCV ELIMINATION PROGRAM

Administrative/Procedural Factors	Clinical Factors
Health system leadership support/resource allocation	Clinician champion
Health insurance coverage of HCV treatment	Clinician training and ongoing hepatologist support
Strategic information: case registry	Case management
Community awareness campaign	Patient navigation assistance
Robust procedures for screening	Colocation of care team
System innovation: phone visits, buprenorphine clinic	

An essential external factor that enabled the scale-up was less burdensome drug procurement. In recent years, public and private insurers removed most barriers for HCV treatment, such as stage of liver fibrosis and documentation of sobriety. The majority of UIHS patients have insurance coverage from Medicaid, Medicare, or private insurance. By mid-2018, all California insurers began providing coverage for HCV treatment regardless of sobriety or level of fibrosis. For clients with a high medication copayment or without insurance coverage, nurse and pharmacy technician staff became adept at navigating patient assistance programs for free medications or copayment waivers, and grant programs for financial support.

On its current trajectory, UIHS is on track to eliminate more than 95% of active HCV infection cases by 2024. Challenges with the patients who remain include active substance use, as well as a lack of phone or transportation. To counter these barriers, the lead HCV provider

has added medication-assisted treatment for opioid use disorder to clinical services. Outreach workers help patients establish or re-establish care. Clinical visits are kept to a minimum to decrease the transport burden on patients, and as appropriate, patients can have some visits via telephone or video. With these additional services, in conjunction with the Humboldt Area Center for Harm Reduction, UIHS can eliminate HCV, sustain reductions in HCV transmission, and reduce health disparities for the communities it serves. The experience of UIHS, a local program serving nine American Indian tribes in northern California, serves as an example of how a rural primary care health network in a high-HCV-prevalence setting can target and achieve HCV elimination (see Table 1).

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