

HCV Elimination: Is it Possible?

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Outline

- Basic concepts in HCV elimination
- Status of HCV elimination in the US
- HCV elimination in a Tribal Health System
- What will it take to eliminate HCV in the US?

Definitions

World Health Organization calls for global elimination of hepatitis C as a public health threat by 2030

Control:

- **The reduction** of disease incidence, prevalence, and morbidity **to a locally acceptable level**

Elimination:

- **Reduction to zero** of the incidence of an infection caused by a specific agent in a **defined geographical area**

Eradication

- **Permanent reduction to zero of the worldwide** incidence of an infection caused by a specific agent

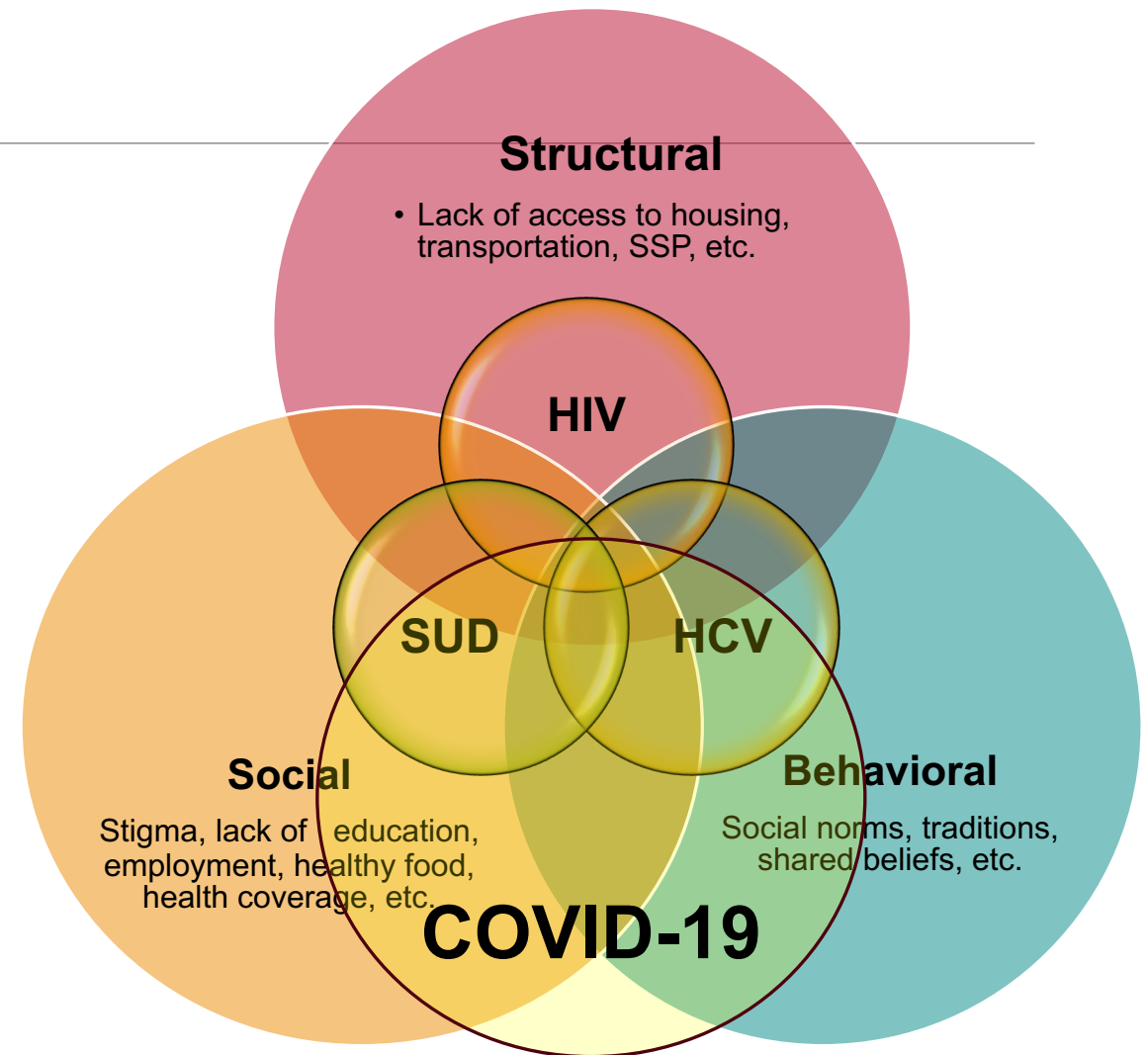
Syndemic

Core principles:

Clustering of two or more conditions in a specific population

Their synergism in producing excess burden of disease in a population

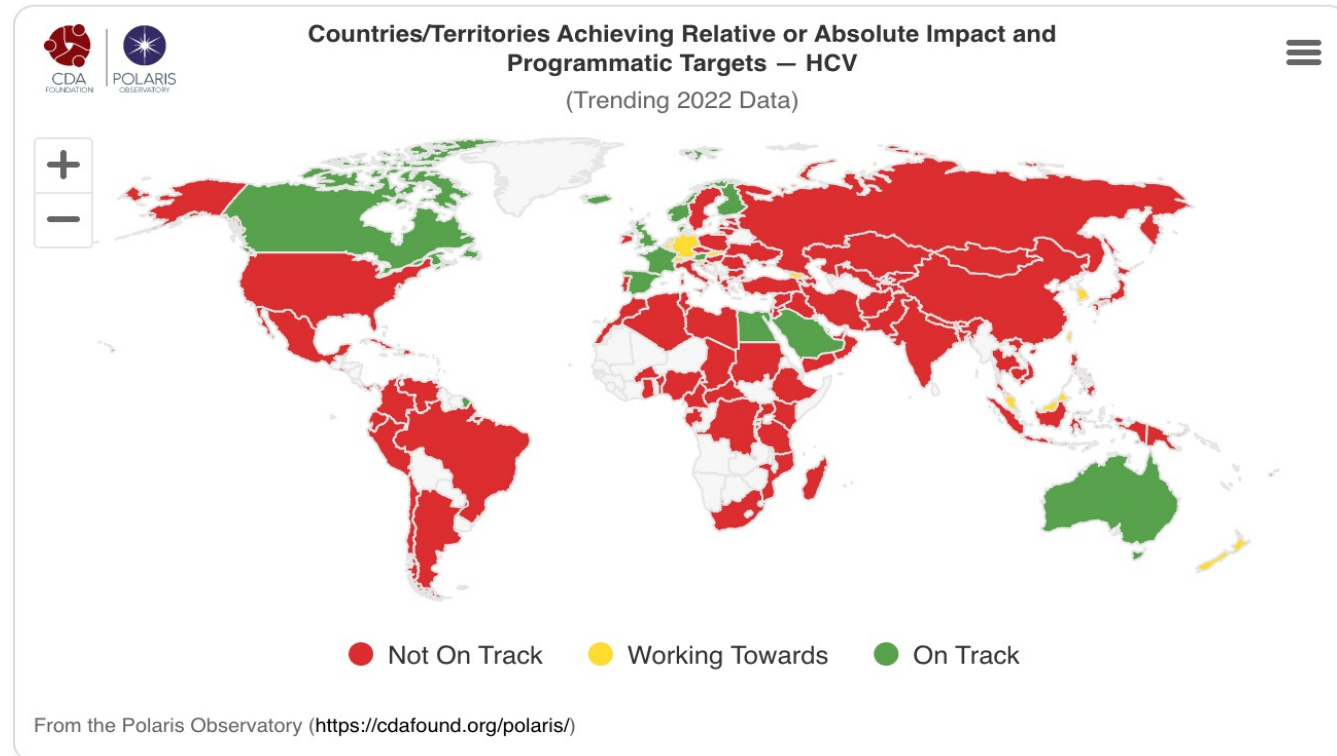
Precipitation and propagation by large scale behavioral, structural and social forces



WHO HCV Elimination 2030 Targets

Targets

- 90% diagnosed
- 80% treated
- 65% reduced mortality
- 90% reduction in HCV incidence



Targets to Eliminate HCV

Prevent sequelae of advancing liver disease

65% reduction
in mortality

Treat Baby Boomers



Prevent new or “incident” infections

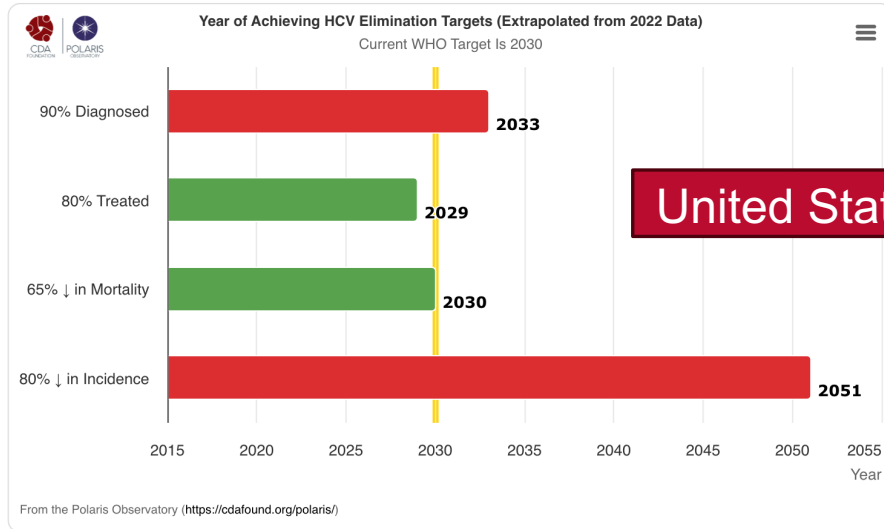
90% reduction
in incidence

Treat persons who inject drugs

Year of Achieving HCV Elimination Targets

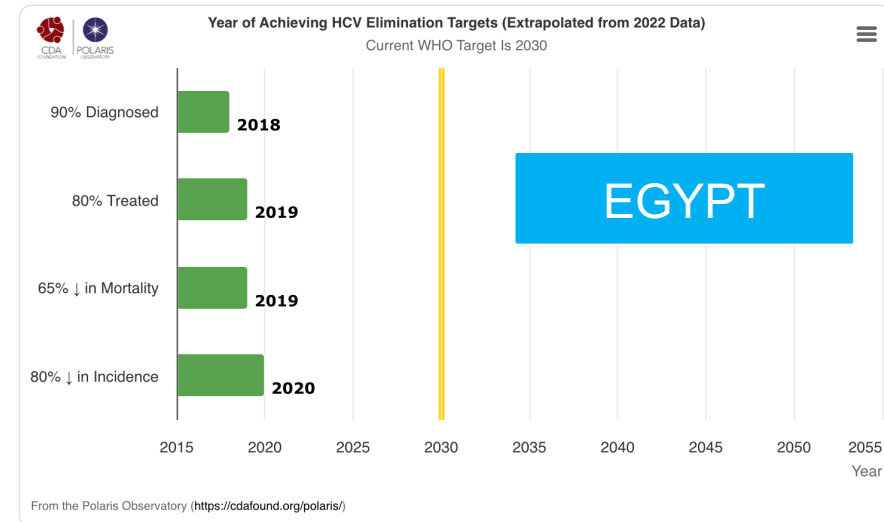
Current WHO Target Is 2030

Year of Achieving All Relative Goals for HCV > Year 2051



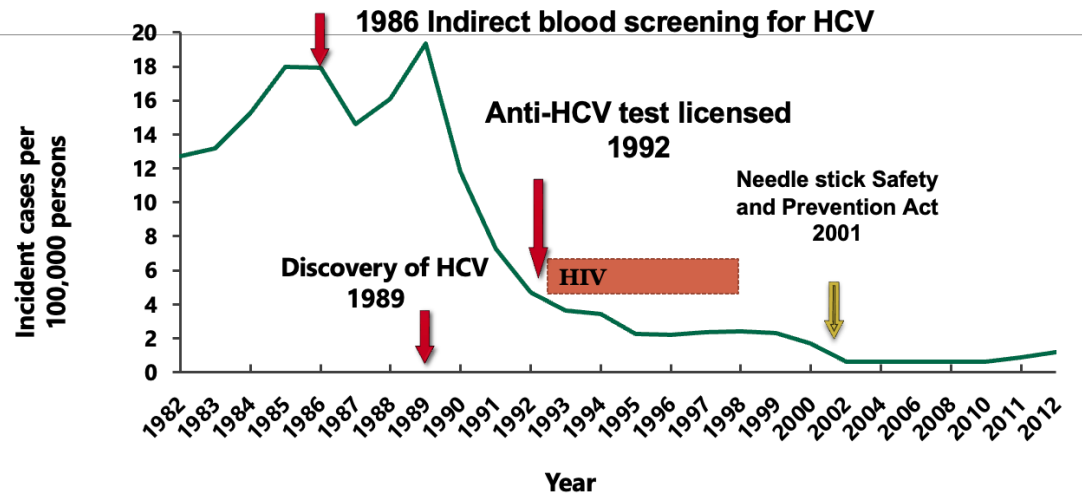
Current WHO Target Is 2030

Year of Achieving All Relative Goals for HCV > Year 2020



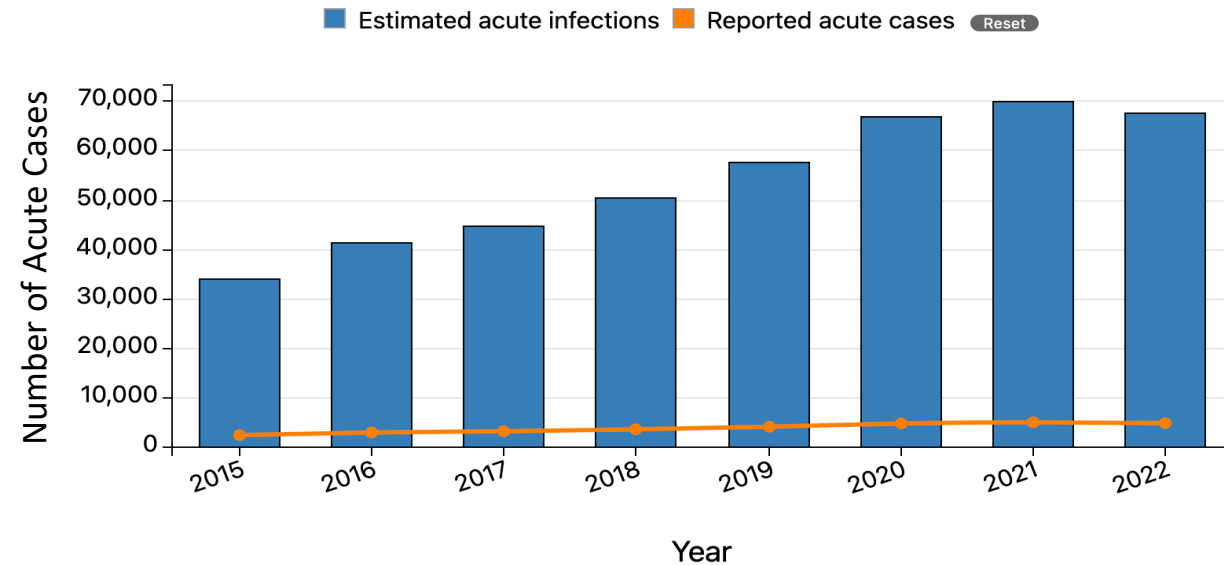
	USA	EGYPT
Universal Health Care	NO	YES
HCV RNA point of care testing	NO	YES
Affordable DAAs for all	NO	YES
Most of HCV care delivered by primary care	NO	YES
Robust harm reduction programs	NO	YES

HCV Elimination Started with discovery of HCV



22,000 cases of incident HCV infection reported in 2012

HCV Infections in the US are Rising



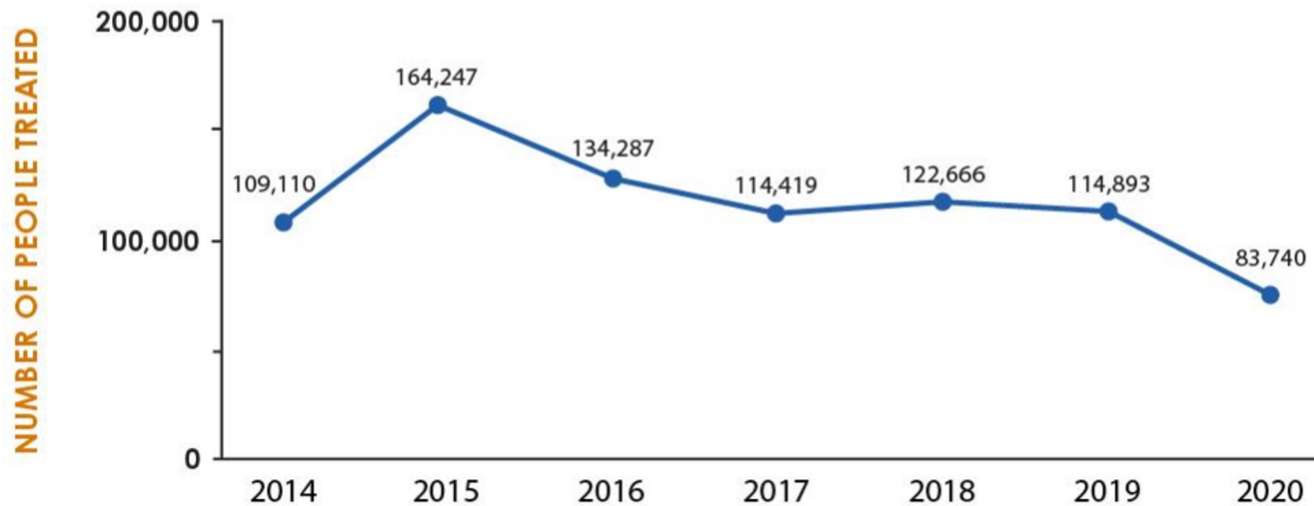
- The incidence rate of acute hepatitis C has more than doubled since 2013 and increased 15% from 2019.
- Persons aged 20-39 years had the highest incidence of acute hepatitis C.
- **66% of cases with risk information, reported injection drug use.**

Centers for Disease Control and Prevention. Viral Hepatitis Surveillance Report – United States, 2020., <https://www.cdc.gov/hepatitis/statistics/2020surveillance/index.htm>. Published September 2022. Accessed July, 2024 2023. Alter MJ JAMA 1990; Jagger J, J infect Dis Pub Health 2008; CDC.gov/hepatitis;

US HCV Cases Increase as Treatment Rates Decrease

THE NUMBER OF PEOPLE WHO INITIATED* HEPATITIS C TREATMENT IN THE U.S. DECLINED FROM 2015 TO 2020

COVID-19-related disruptions to hepatitis C testing and treatment likely contributed to the decline in 2020



It is estimated that to eliminate HCV > 260,000 people should be treated every year.

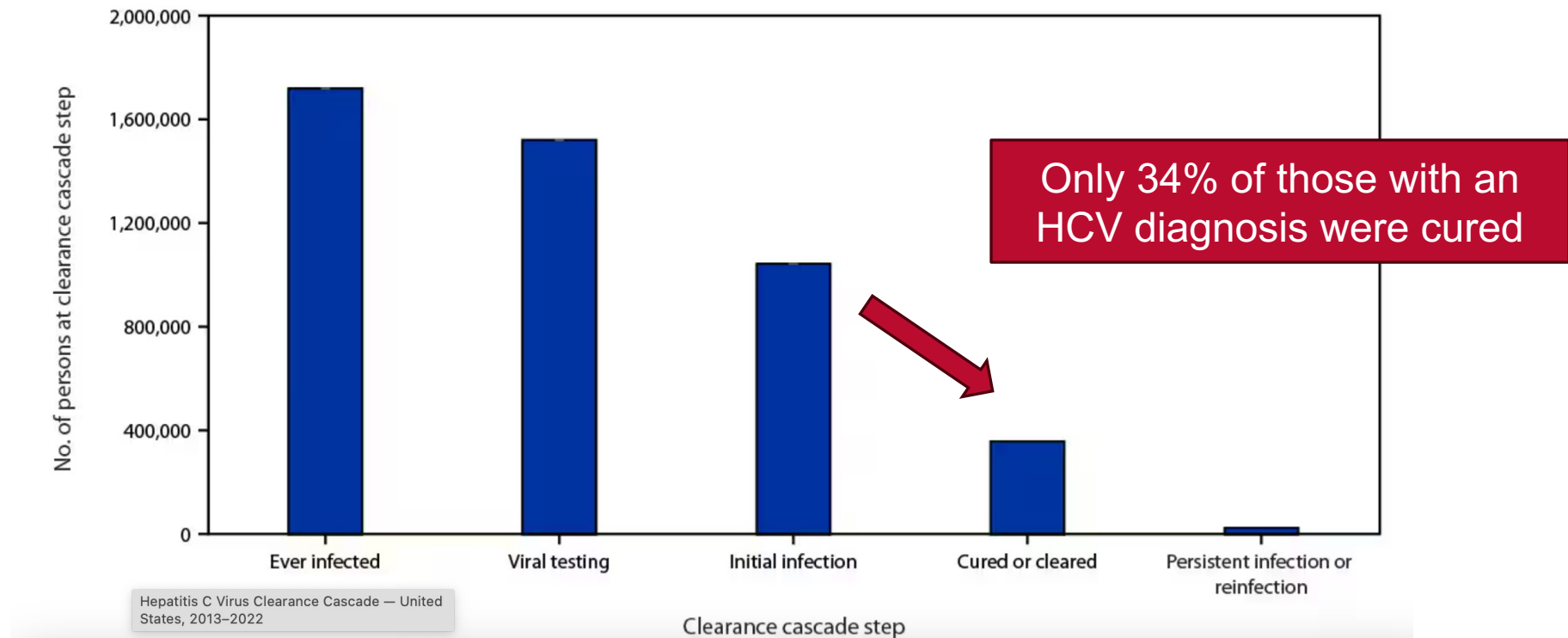
*Based on national prescription claims data

For more information, visit [cdc.gov/nchhstp/newsroom](https://www.cdc.gov/nchhstp/newsroom)



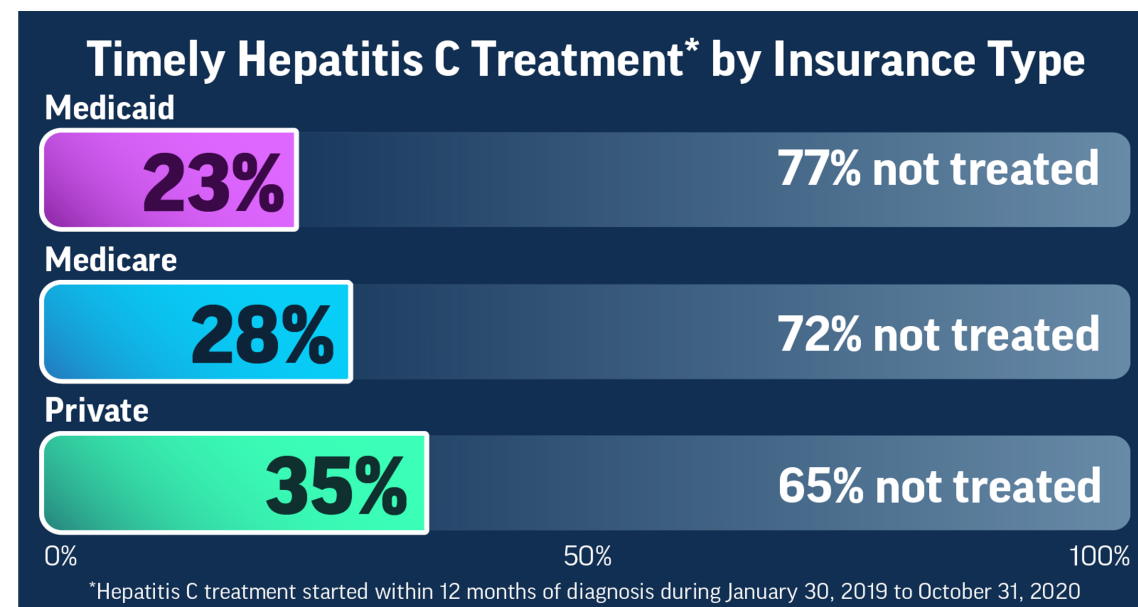
U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

Hepatitis C virus clearance cascade using national commercial laboratory data, — United States, 2013–2022



HCV Care: A Health Equity Issue

- **Communities with high HCV impact and with restricted access to treatment**
 - Communities of color
 - Rural communities
 - People who have housing insecurity
 - People who use drugs
 - People who have a history of incarceration



Only 1 in 3 of Insured Receive Timely HCV Treatment

Barriers to HCV Elimination in the US

Lack of awareness of infection in 50 %

Lack of point-of-care diagnostics



Delay in Treatment

High Cost of DAAs



Insurance restrictions

Treatment not incorporated routinely in primary care

Marginalized populations not properly served (People who are incarcerated, homeless or inject drugs)



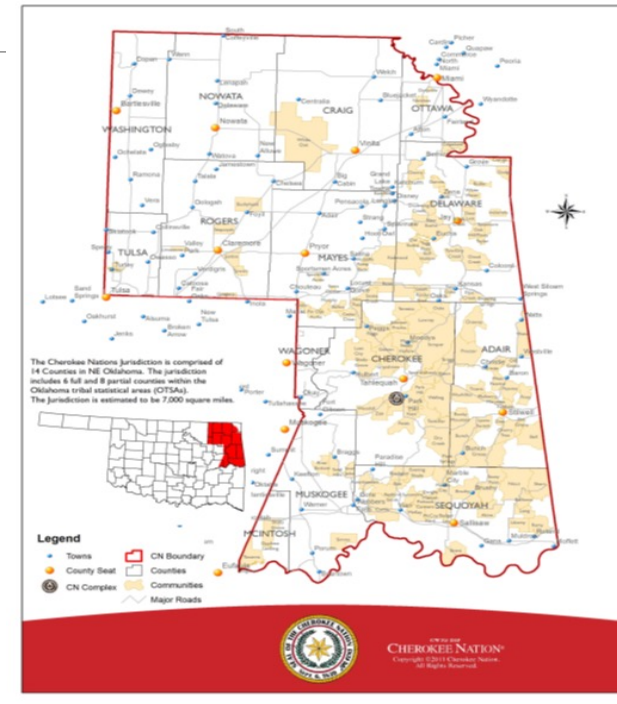
Increased Transmission

Cherokee Nation



- **Sovereign Nation within a Nation**
- **Largest Tribe in the US**
- **> 450,000 citizens worldwide**
- **14 county area (over 9,200 sq mi.)**
- **141,000 reside within the reservation**

Cherokee Nation Health Services



- **Largest Tribal Health System in the USA**
- **One central hospital and 9 outlying clinics**
- **Serves > 140,000 American Indian/Alaska Native**

Eliminating hepatitis C virus (HCV) as a public health threat: A comprehensive approach involving various interventions

HCV Awareness Day

October 31, 2015

Leadership and Partners

- Government, universities, pharma

Screening and Diagnosis:

- Universal Screening

Expanding HCV Workforce

- Training primary care providers through Project ECHO

Treatment Access

- Dedicated case managers

Prevention Programs

- SSP, MAT, treatment as prevention



“As Native people and as Cherokee Nation citizens, we must keep striving to eliminate hepatitis C from our population.”
Chief Bill John Baker

CNHS HCV Screening and Diagnosis: Interventions



Age targeted screening

2012-2015: Baby boomer screening
2015-2024: **Universal screening**



Electronic Health Reminders

Addressed by nurses



HCV Ab reflex to RNA

Health system wide



Lab triggered Screening

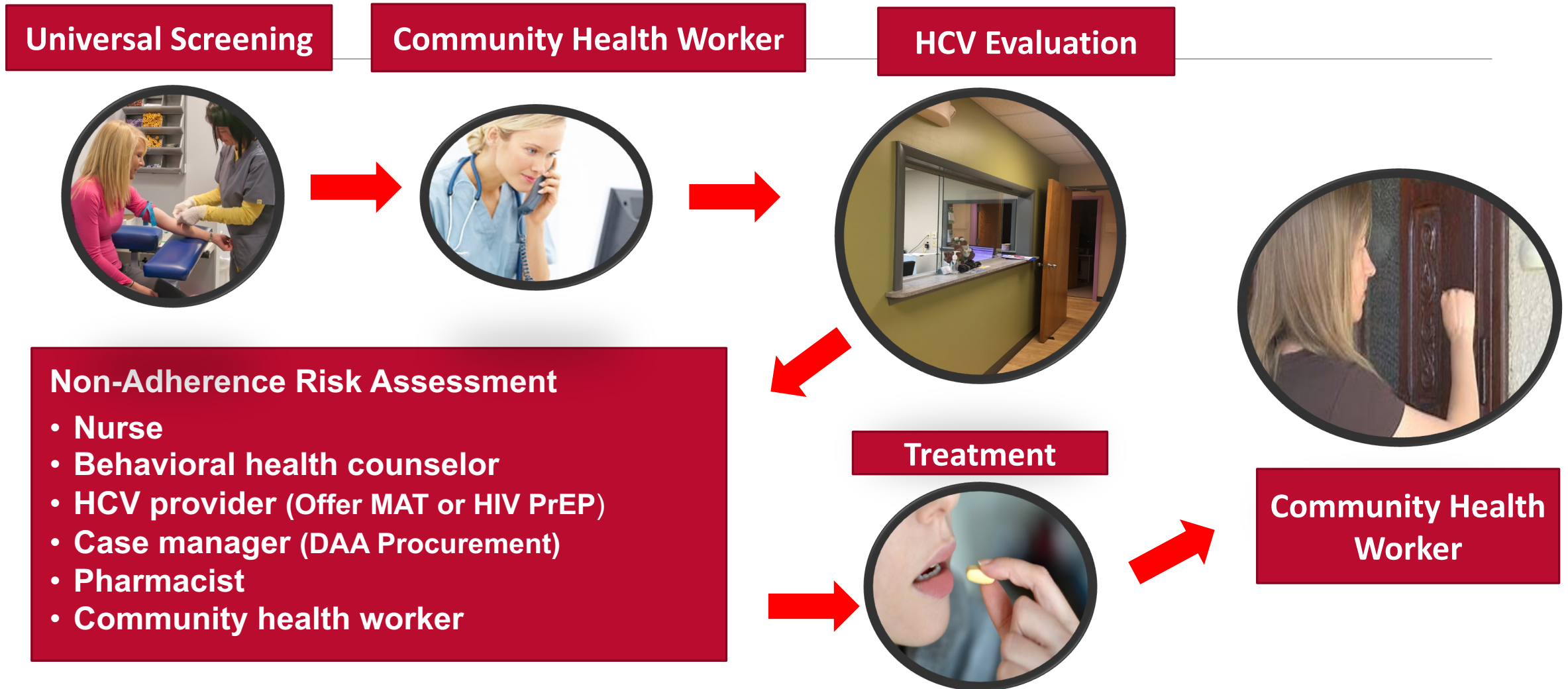
ED and UC



Point of care antibody testing

ED, Dental Clinics, SSP, homeless shelter,
substance use recovery programs

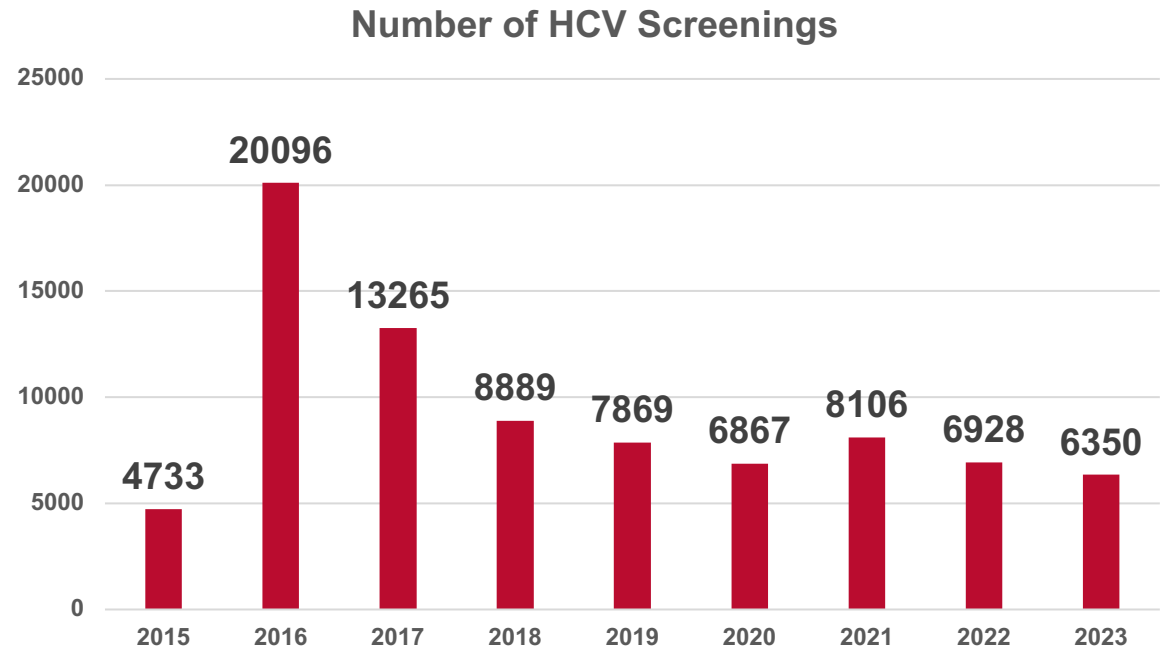
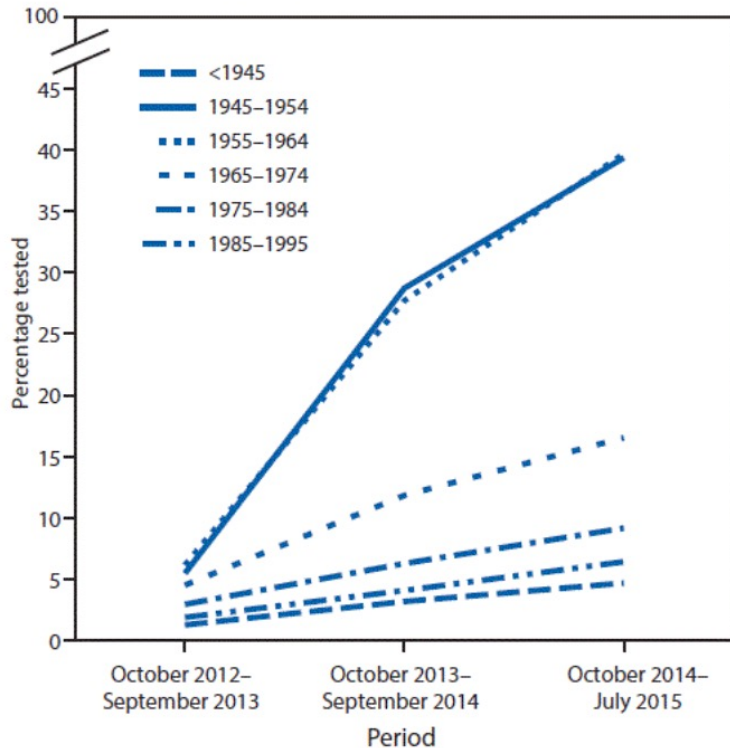
The CNHS Syndemic Care Model



CNHS HCV Screening Outcomes

Cumulative percentage of persons who received one or more hepatitis C virus antibody tests, by birth cohort — Cherokee Nation Health Services, October 2012–July 2015

Universal Screening of Individuals Who Accessed the CNHS Screening sites from October 2015–December 2023 and Were Screened for HCV



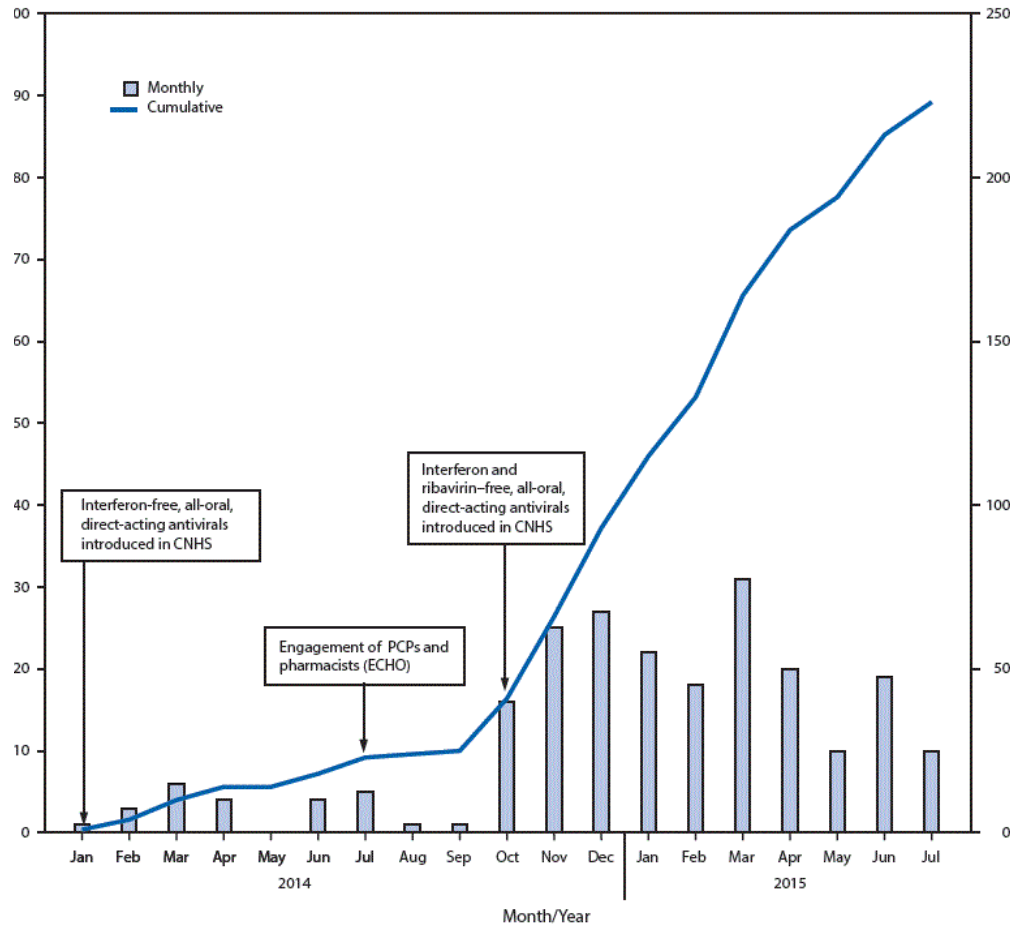
*Numerator: # of unique (≥18 years) screened for HCV
 **Denominator: # of unique patient (≥18 years) who had an encounter in the UC/ED, Hospital, primary care and women’s clinic

As of December 2023, **82.5%** of patients > 18 yo who accessed the health system have been screened

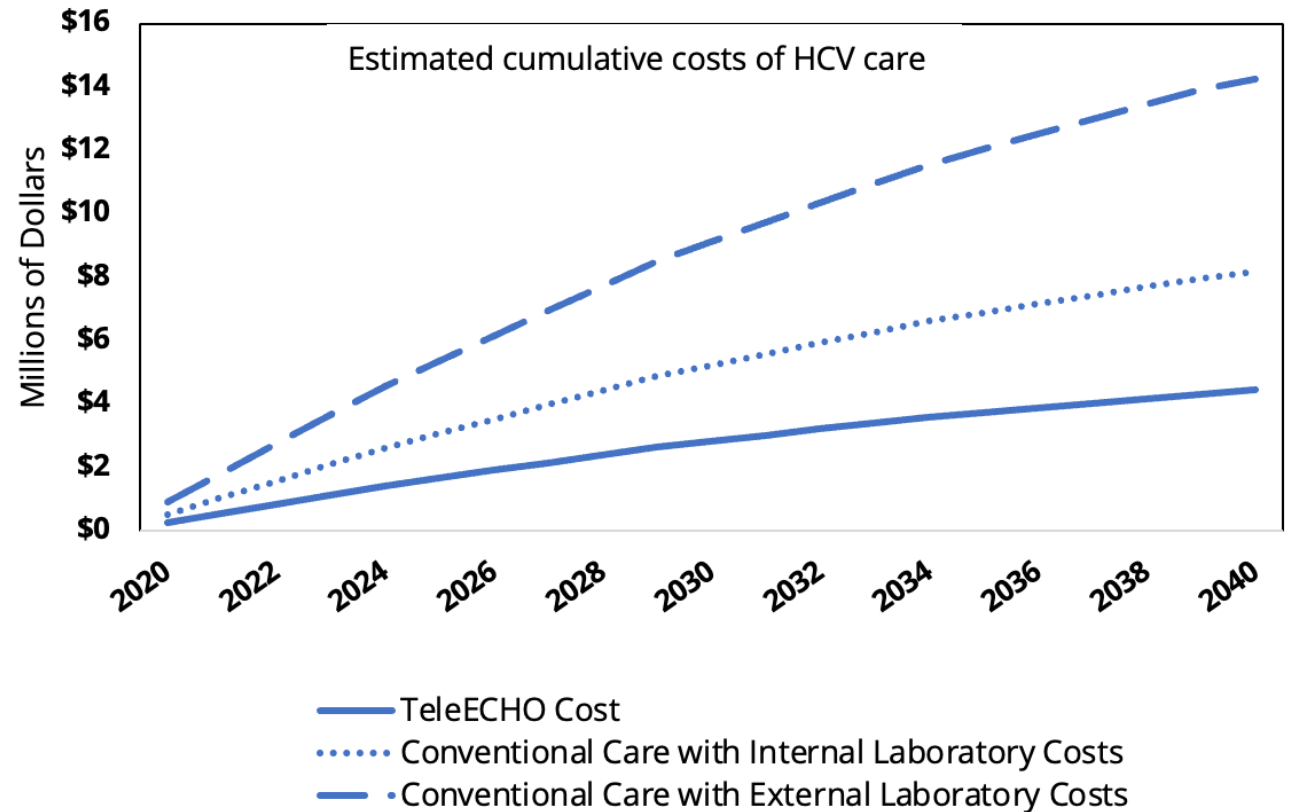
Mera J, Vellozzi C, Hariri S, et al. Identification and Clinical Management of Persons with Chronic Hepatitis C Virus Infection — Cherokee Nation, 2012–2015. MMWR Morb Mortal Wkly Rep 2016;65:461–466.

HCV Health Care Infrastructure Strengthening: Incorporating the ECHO Model

Number of patients with hepatitis C virus (HCV) infection who tested RNA positive and initiated all-oral, anti-HCV therapy, by month and cumulative total — Cherokee Nation Health Services (CNHS), January 2014–July 2015¹



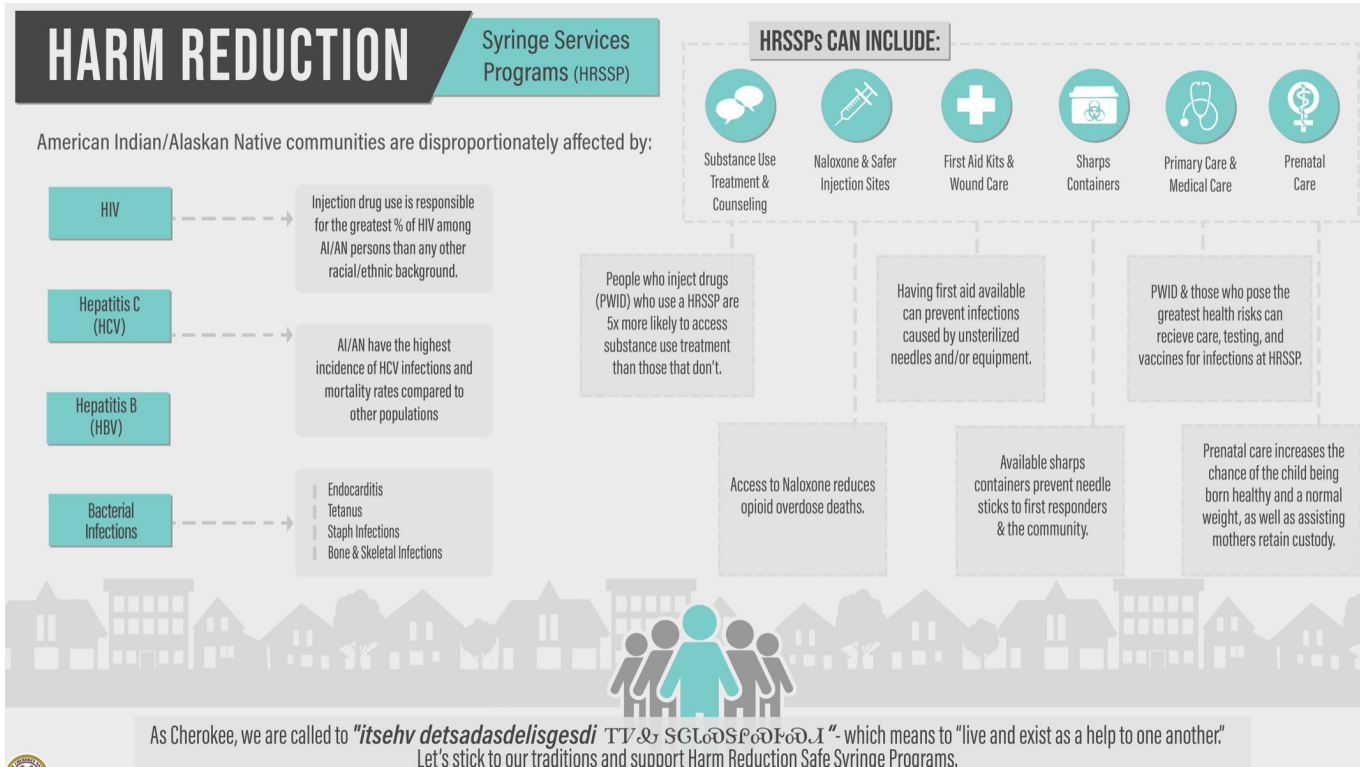
Estimated cumulative costs of care for hepatitis C virus infection via ECHO and conventional care — Cherokee Nation Health Services, Oklahoma, 2020–2040²



1. Mera J, Vellozzi C, Hariri S, et al. Identification and Clinical Management of Persons with Chronic Hepatitis C Virus Infection — Cherokee Nation, 2012–2015. MMWR Morb Mortal Wkly Rep 2016;65:461–466
 2. Jorge Mera, Molly Feder, Jeri Sawyer, Gretchen Greene, Brigg Reilley, Ashley Wirth, David Stephens, Jessica Leston: Poster 01946 presented at ID Week 2023, Washington, DC



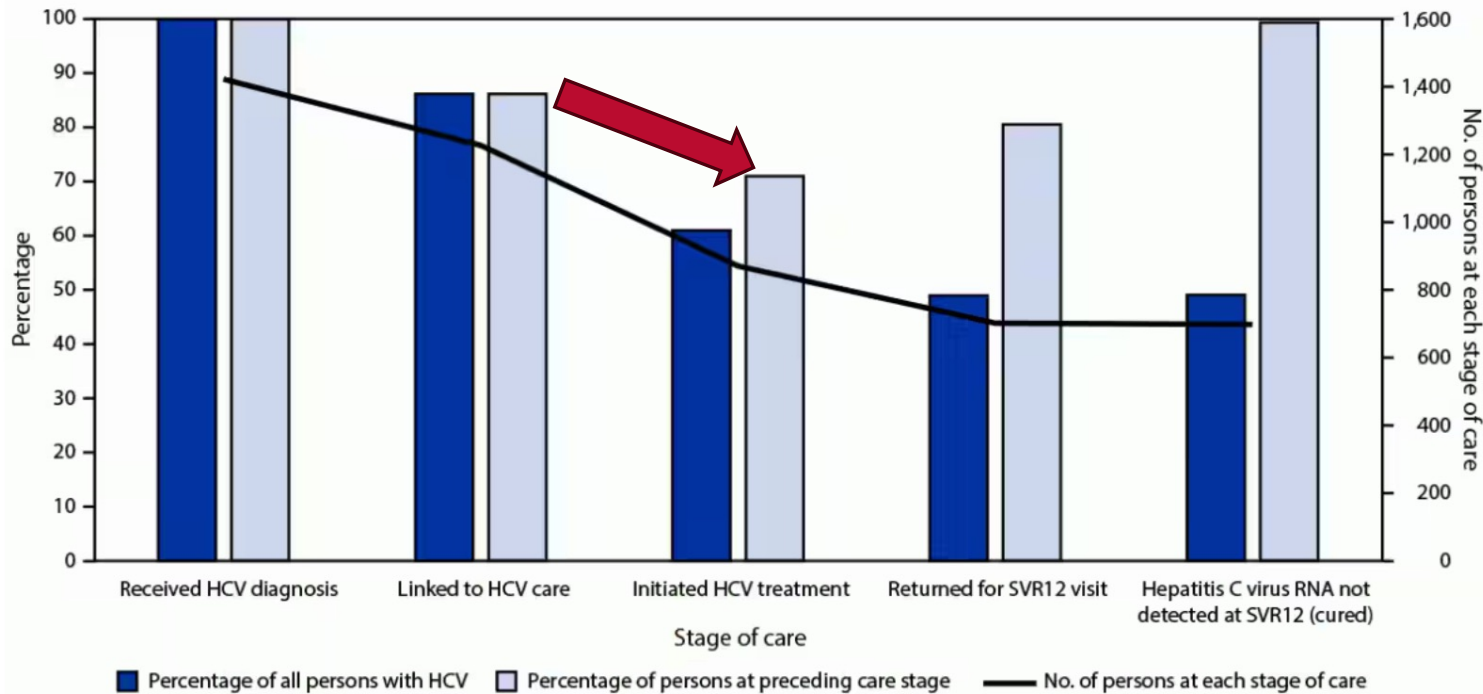
CNHS Harm Reduction Program



MAT services: 798 patients enrolled
SSP services: 806 clients enrolled

Impact of Interventions on CNHS HCV Cascade of Care

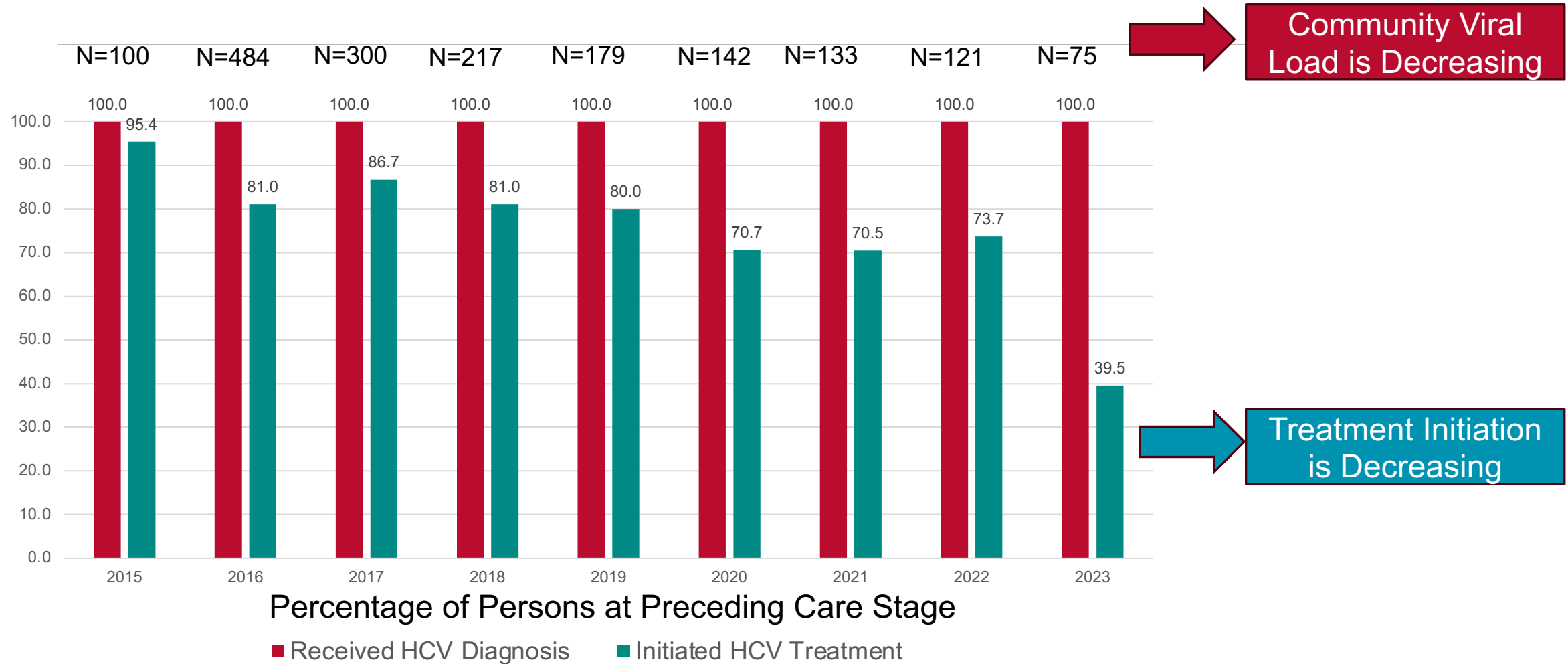
Cascade of care among persons with hepatitis C virus infection (N = 1,423) — Cherokee Nation Health Services, Oklahoma, November 2015–October 2020



- Five years after implementing a hepatitis C elimination program, Cherokee Nation Health Services (CNHS) had diagnosed hepatitis C in 1,423 persons, **86% of whom were linked to care.**
- **Although only 61% initiated treatment, 99% of those who completed treatment were cured.**
- Barriers to HCV treatment initiation include lack of access to direct-acting antivirals at the time of HCV evaluation.

Abbreviations: HCV = hepatitis C virus; SVR12 = sustained virologic response >12 weeks after treatment completion.

CNHS HCV Cascade of Care By Year



HCV Screening: Community Outreach

Site	# of Individuals Screened	# of individuals with positive HCV antibody	Percentage Positive
Food distribution site*	340	11	3.5%
Homeless Shelter	15	2	13%
Syringe service program	162	39	24%
Peer Recovery	51	14	27%
Jail	0	NA	NA

What Will it Take To Eliminate HCV in the CNHS?



What Will it Take to Eliminate HCV in the US?

Test and treat patients where they are

- SSPs, jails, prisons, MAT clinics, homeless shelters, etc.
- HCV RNA POC
- DAAs at affordable prices and available on site

Access to SSP and MAT

- For all people who need it

HCV Care

- Mostly delivered by Primary Care and pharmacists

Social determinants of health

- Address stigma, poverty, housing, food insecurity, mobility, incarceration, etc.

“The targets for HCV screening, treatment, and cure should aim for a 100% success rate, otherwise, the most vulnerable persons are at risk of being overlooked and left behind”



THANK YOU



QUESTIONS?

