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DISCLOSURES

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DISCLOSURES

COMPLETING THIS ACTIVITY

Upon successful completion of this activity 1 contact hour will be awarded

Successful completion of this continuing education activity includes the following:

- Attending the entire CE activity;
- Completing the online evaluation;
- Submitting an online CE request.

Your certificate will be sent via email

If you have any questions about this CE activity, contact Michelle Daugherty at mdaugherty@cardeaservices.org or (206) 447-9538



CONFLICT OF INTEREST

Dr. Jorge Mera is director of a program partially funded by Gilead and received an honorarium from ABBVIE.

None of the other planners or presenters of this CE activity have any relevant financial relationships with any commercial entities pertaining to this activity.



Acknowledgement

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The Indian Health Service HIV Program
and

The Secretary's Minority AIDS Initiative Fund



Hepatitis C Virus Elimination

Jorge Mera, MD, FACP



Outline

- Why is HCV elimination needed in AI/AN communities
- Overview of HCV elimination
- Micro elimination?
- Overview of the Cherokee Nation Health Services HCV elimination program (or Micro-elimination?)
- Impact of the program and conclusions

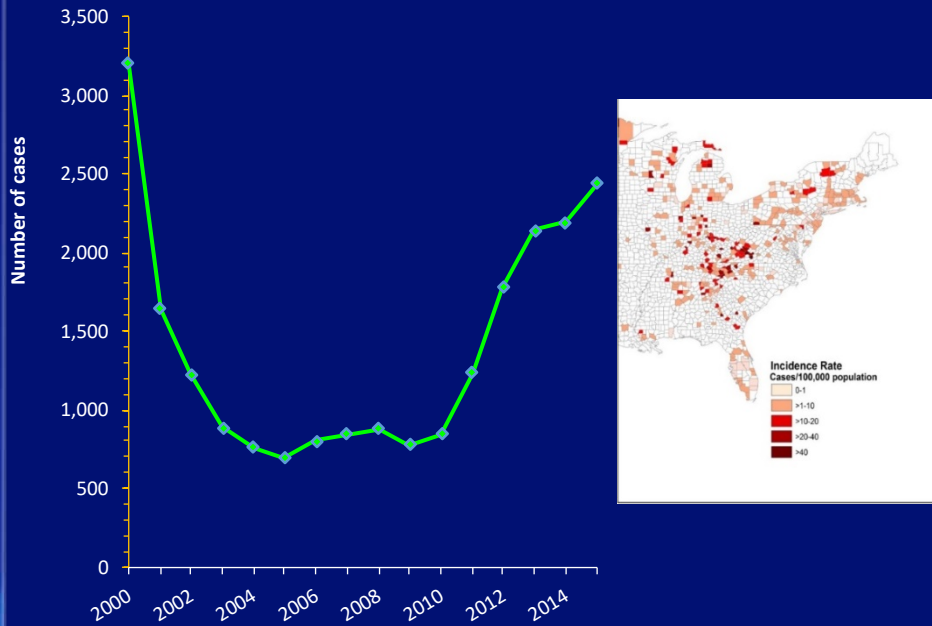
In the USA, 68% of Acute Cases of HCV Report IDU



Source: CDC, National Notifiable Diseases Surveillance System (NNDSS)
Photograph courtesy of Jorge Mera, MD, permission to reproduce consented

IDU: Injection Drug Use

Change in HCV Incidence is Associated with Increases in Injection Drug Use



- ~31,000 new HCV infections in 2015
- 1:1 male: female ratio, predominantly white
- Highest incidence- 20-29 years, non-urban areas

FIGURE 1. Percentage of all admissions to substance abuse treatment centers attributed to the injection of any opioid, prescription opioids, heroin, and all other drugs, by year, United States, 2004–2013

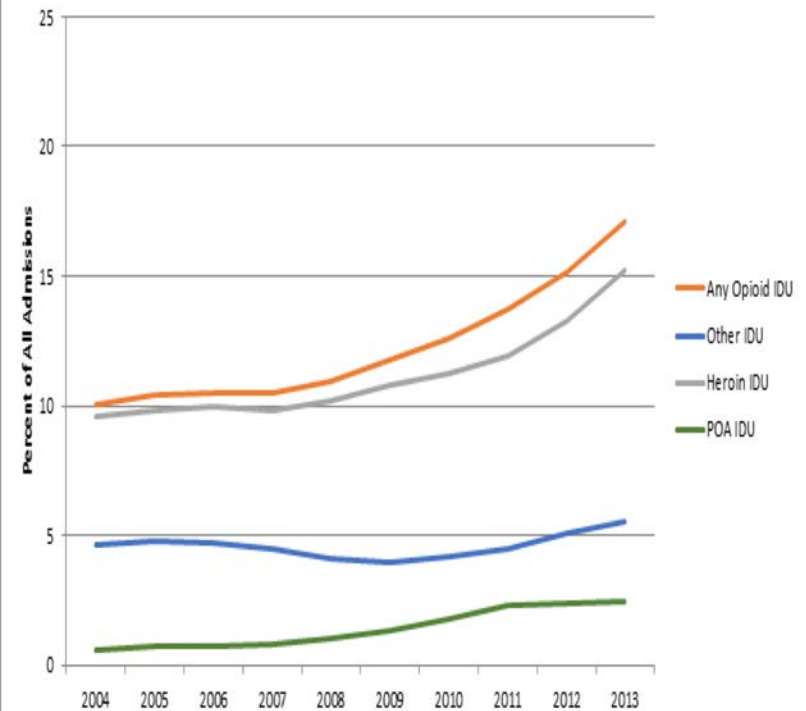
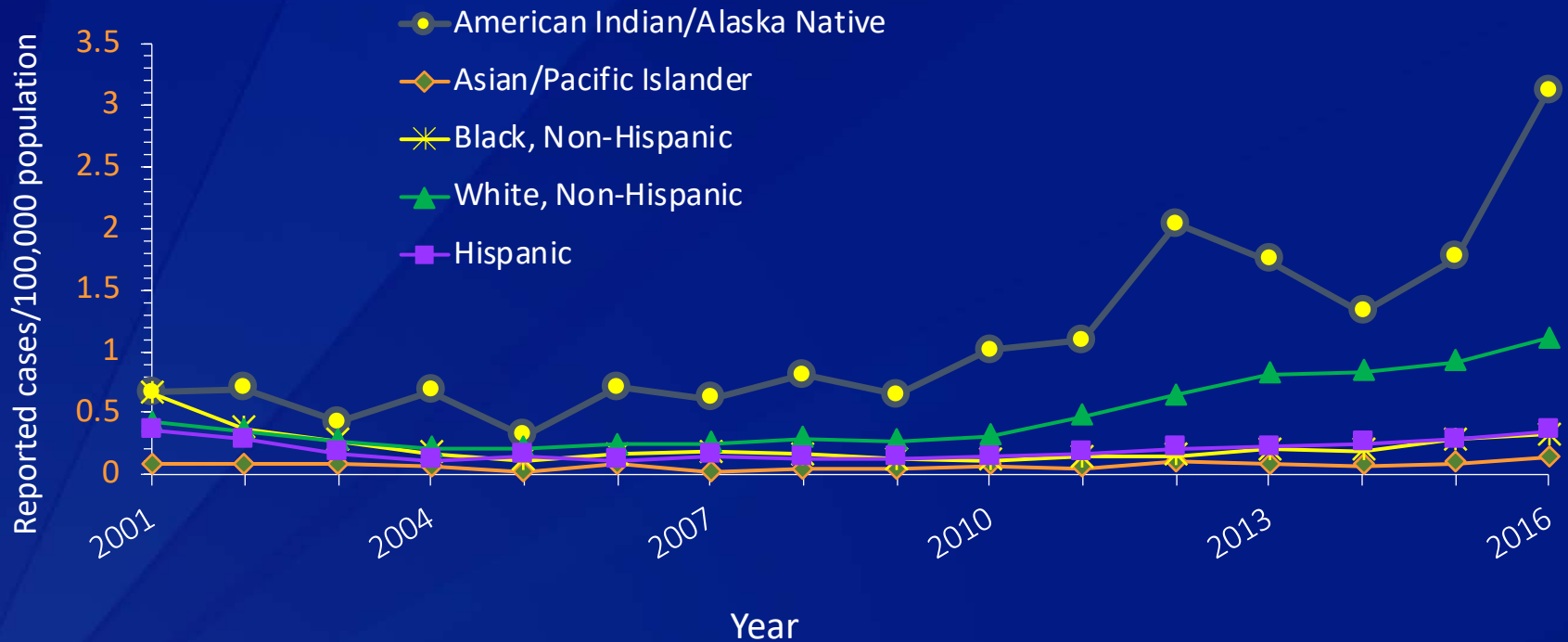






Figure 4.4. Incidence of acute hepatitis C, by race/ethnicity — United States, 2001–2016



Source: CDC, National Notifiable Diseases Surveillance System (NNDSS)



Feasibility Criteria for Elimination

In General ¹	Hepatitis C Virus	Check list
No non- human reservoir and the organism can not multiply in the environment	No non human reservoir	
There are simple and accurate diagnostic tools	Serology widely available	
Practical interventions to interrupt transmission	Treatment as prevention Needle and syringe programs Medication assisted programs	
The infection can in most cases be cleared from the host	Treatment is 95% curative	

Linkage to Care

Screening

Quality of Care

HCV



THE CHEROKEE TRAIL OF TEARS

The forced removal of more than 15,000 Cherokee from the eastern U.S. to Oklahoma resulted in the deaths of thousands. Fort Armistead, near Coker Creek in Monroe County, was used as a collection point along the historic Unicoi Turnpike.



Source: National Park Service

NEWS SENTINEL

Prevent

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*Maria Yellow Horse Br...
Journal of Psychoactive D...

HCV Elimination: Definitions and Goals

- **Definition:**
 - Elimination of hepatitis C as a *public health problem*
- **Goals:**
 - **National Viral Hepatitis Action Plan 2017-2020¹**
 - Decrease in new infections by 60 % by the year 2020
 - Decrease in mortality by 25 % by the year 2020
 - ***National Academy of Sciences²***
 - Decrease the incidence of new infections by 90% by the year 2030
 - Decrease in mortality by 65 % by the year 2030

1. <https://www.cdc.gov/hepatitis/hhs-actionplan.htm> 2. National Academies of Sciences, Engineering, and Medicine. 2017. *A National Strategy for the Elimination of Hepatitis B and C: Phase Two Report*. Washington, DC: The National Academies Press

Key Concepts to Guide HCV Elimination

- **Decrease the burden of HCV related liver diseases by treating the chronically infected population**
 - Birth cohort (patients born between 1945-1965/1975*)
 - Anyone infected for 20 + years or with multiple liver comorbidities
- **Decrease new infections by preventing transmission**
 - **Mainly target the younger population who are PWID**
 - *Treatment as prevention* /MAT/Needle and syringe programs
 - Address unsafe medical practices
 - Address sexual transmission in MSM

Edlin BR, Winkelstein ER. 2014. Antiviral Research. 110:79-93

Grebely J, Dore GJ. 2014. Antiviral Research. 104:62-72

*Shah H, Bilodeau M, et al. CMAJ June 04, 2018 190 (22) E677-E687

PWID: People Who Inject Drugs

MAT: Medication Assisted Treatment

MSM: Men who have Sex with Men

What is HCV Micro Elimination?

- ***Rapidly tackling HCV in a well defined population***
 - People who inject drugs
 - People with hemophilia
 - People who are incarcerated
 - People who are HIV/HCV co-infected
 - People from a defined health system
 - People in hemodialysis units, etc.etc.etc.
- Focusing elimination efforts in smaller affected populations allows for quick, efficient targeting of treatment and prevention services
- Micro-elimination strategies can help build momentum where logistic and political challenges hamper national plans for elimination

Cherokee Nation



- **Sovereign Nation within a Nation**
- One of the 566 Federally recognized tribes and 2nd largest Indian Nation (~350,000 citizens)
- **Tripartite government**
- 14 county area (over 9,200 sq mi.)
- **Capitol located in Tahlequah, Oklahoma**
- Largest Tribal Health System in the USA
- **One central hospital and 8 outlying clinics**
- **Medically serves 130,000 AI/AN**
- Unified electronic health record.
- **80,928 unique patients ages 20-69 visit the health system in a 3 year period**

Goal #1: Secure Political Commitment

HCV Awareness Day
October 31, 2015



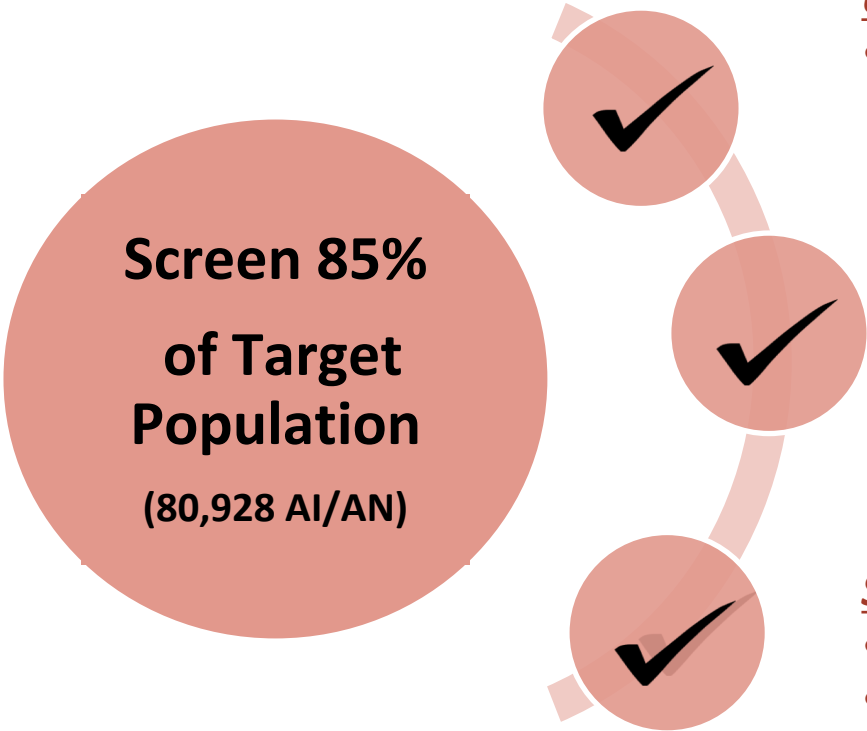
HCV Elimination Awareness Day
October 31, 2017



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

Chief Bill John Baker

Goal #2: HCV Screening Expansion



Screen 85%
of Target
Population
(80,928 AI/AN)

Universal Screening

- Ages 20-69

Non-Traditional Screening Sites

- Emergency Department
- Urgent Care
- Dental Clinics
- OBGYN

Screening Modalities

- EHR Reminders
- Point of care antibody test
- Lab Triggered screening

Cost-effectiveness: HCV Testing Expansion

- *“In addition to risk-based testing, one time HCV testing of persons 18 and older appears to be cost-effective, leads to improved clinical outcomes and identifies more persons with HCV than the current birth cohort recommendations. These findings could be considered for future recommendation revisions”.*
 - Barocas JA et al. **Population-level Outcomes and Cost-Effectiveness of Expanding the Recommendation for Age-based Hepatitis C Testing in the United States** *Clinical Infectious Diseases*, Volume 67, Issue 4, 1 August 2018, Pages 549–556

Goal #2: HCV Screening Expansion

Interventions and Outcomes

<u>Period</u>	<u>Interventions</u>	<u>Number of Unique Patients Screened (% seropositive)</u>	<u>Number of Patients Screened per month</u>	<u>% HCV Seropositive Patients Born after 1965</u>
1/2006 - 9/2012	<ul style="list-style-type: none"> ➤ High Risk Patients ➤ Patients with cirrhosis ➤ Patients with elevated LFT's 	5,425 (10.8%)	57	?

Goal #3: Link to Care, Treat, and Cure

Before HCV Evaluation

Patient Navigator

Medication Procurement Specialist

Public Health Nurse

- Link the patient to the clinic for appointment with HCV Provider
- Initial point of contact between the clinic and the patient

During Evaluation

Licensed Drug and Alcohol Counselor

- If substance use disorder is present, appropriate referrals are made (MAT, Counseling, Psychiatry, etc.)

Utilize ECHO for Primary Care providers

After Treatment Initiation

Clinical Case Manager

Pharmacist

Community Health Worker

- Follow the patient during treatment to help ensure adherence and follow up to SVR
- Sometimes will include direct observed therapy (DOT)

Goals

Link to care

85%

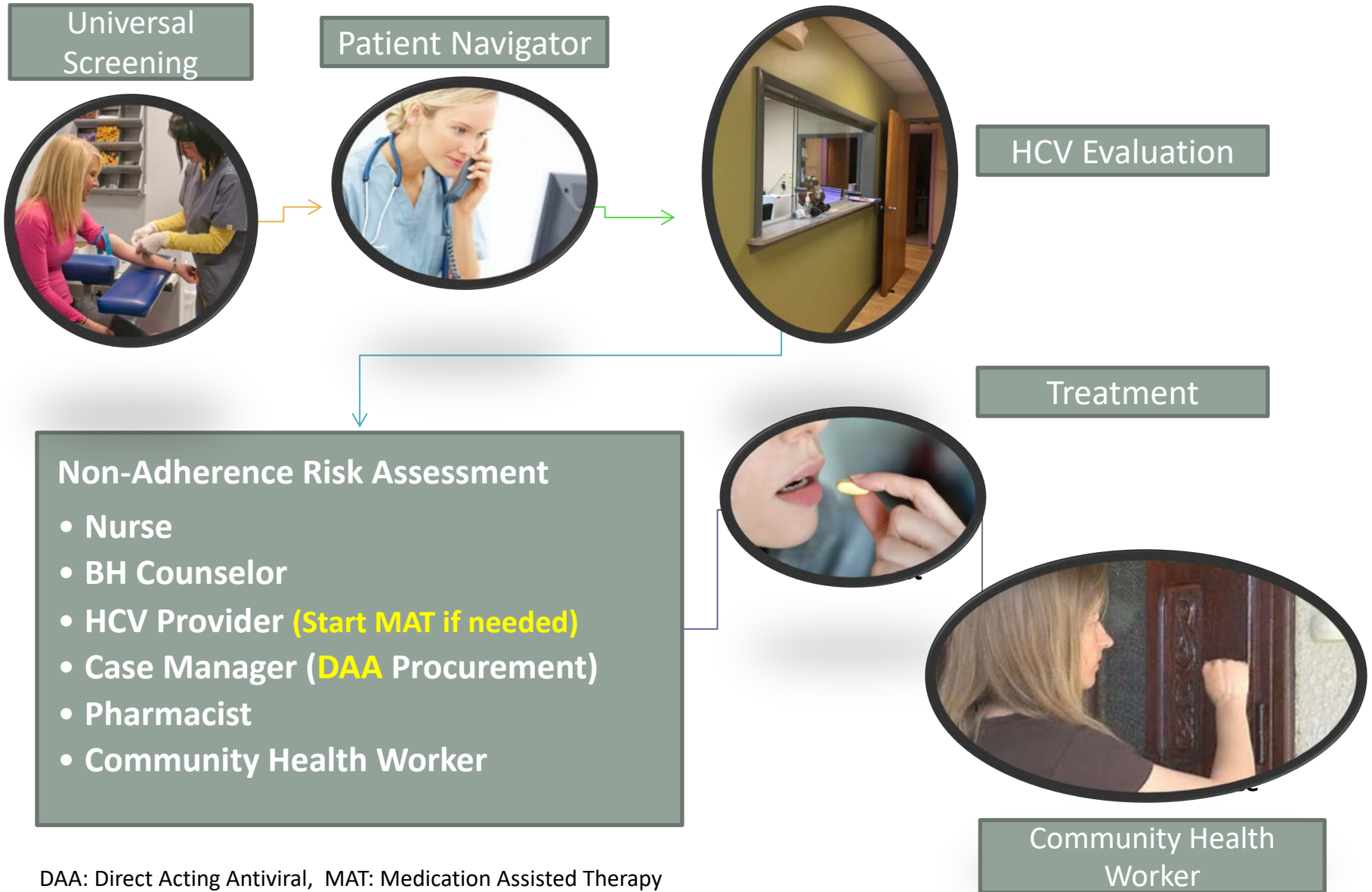
Treat

85%

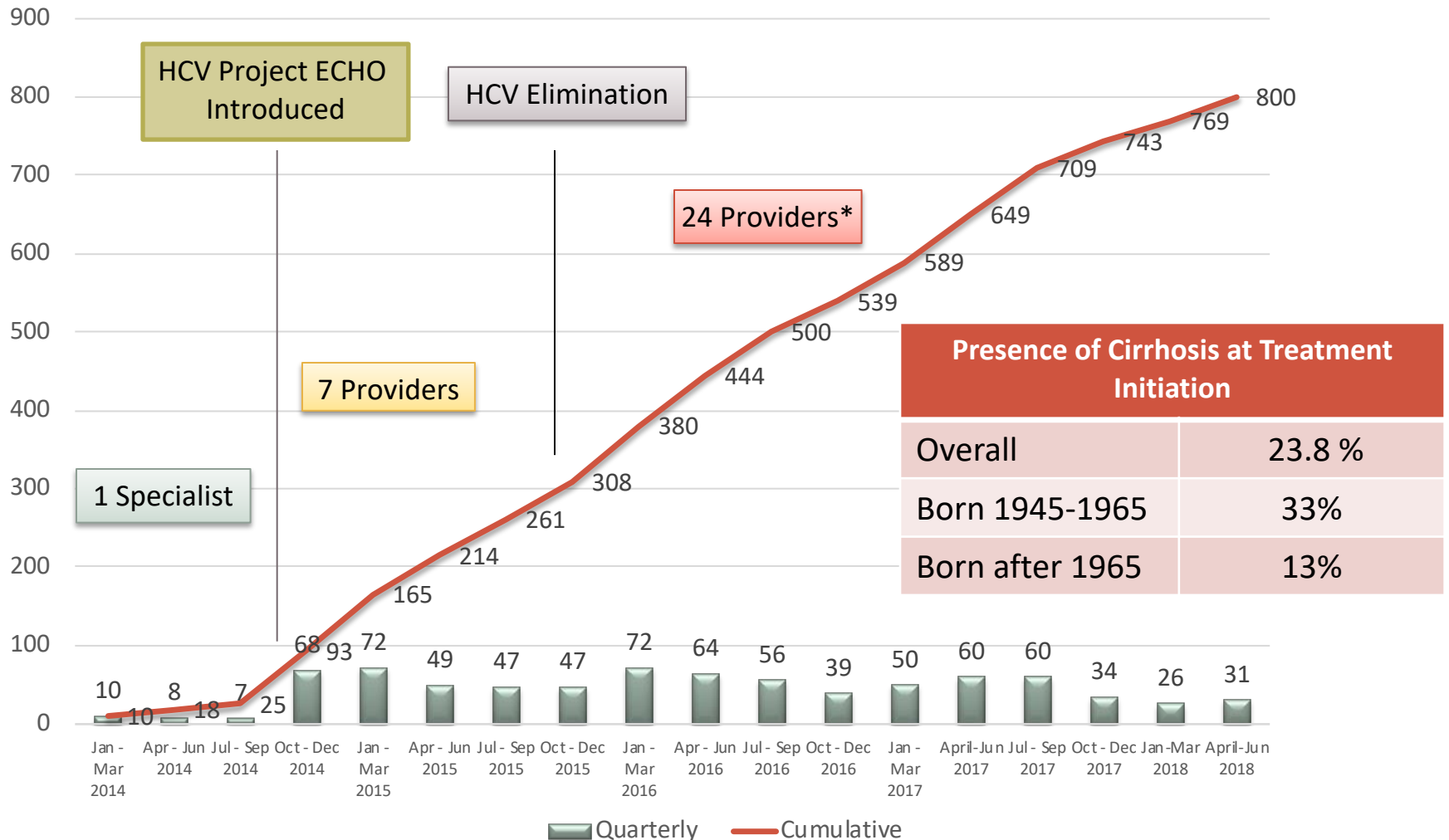
Cure

85%

The CNHS Comprehensive HCV Care Model



CNHS HCV Clinical Capacity Expansion 1/2014 – 6/2018



*Providers included 1 Specialist, 8 Physicians, 8 Pharmacists and 7 Nurse Practitioners

Cure rates did not differ by provider type

Goal #4: Reduce the incidence of new HCV infections



Public and Provider Awareness

- Public Campaign
- Provider Training

Contact Tracing

- Acute HCV
- PWID

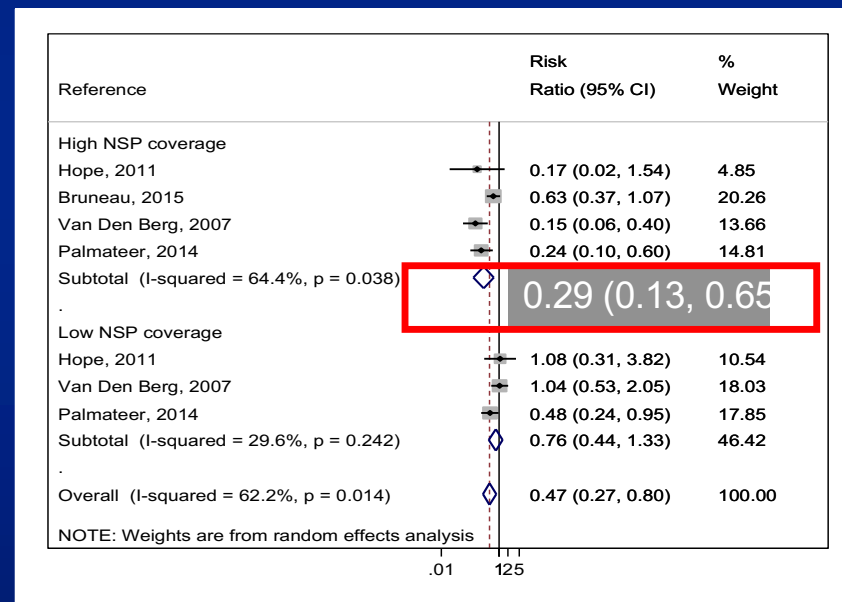
Harm Reduction

- Treatment as Prevention
- MAT
- NSP (NOT Available in Oklahoma)

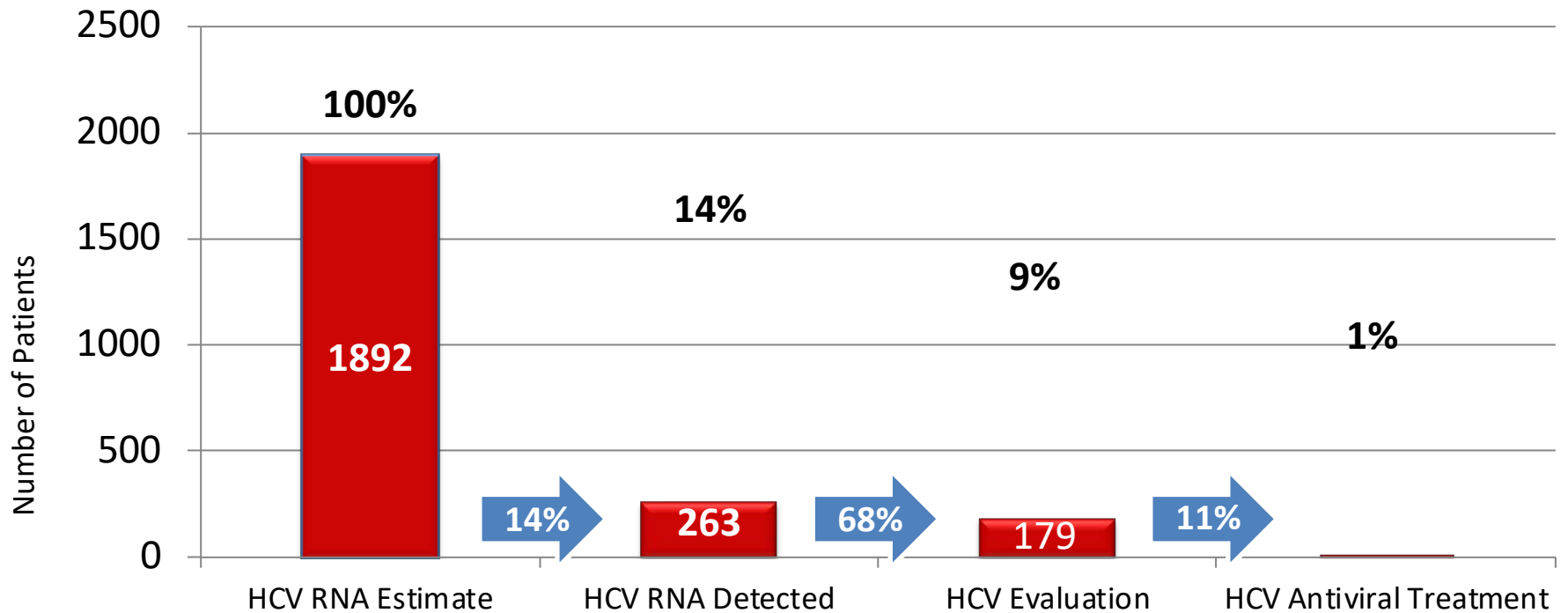
MAT: Medication assisted treatment
NSP: Needle and syringe program

Syringe Service Programs (SSP) and Medication Assisted Treatment (MAT) Prevent HCV Transmission

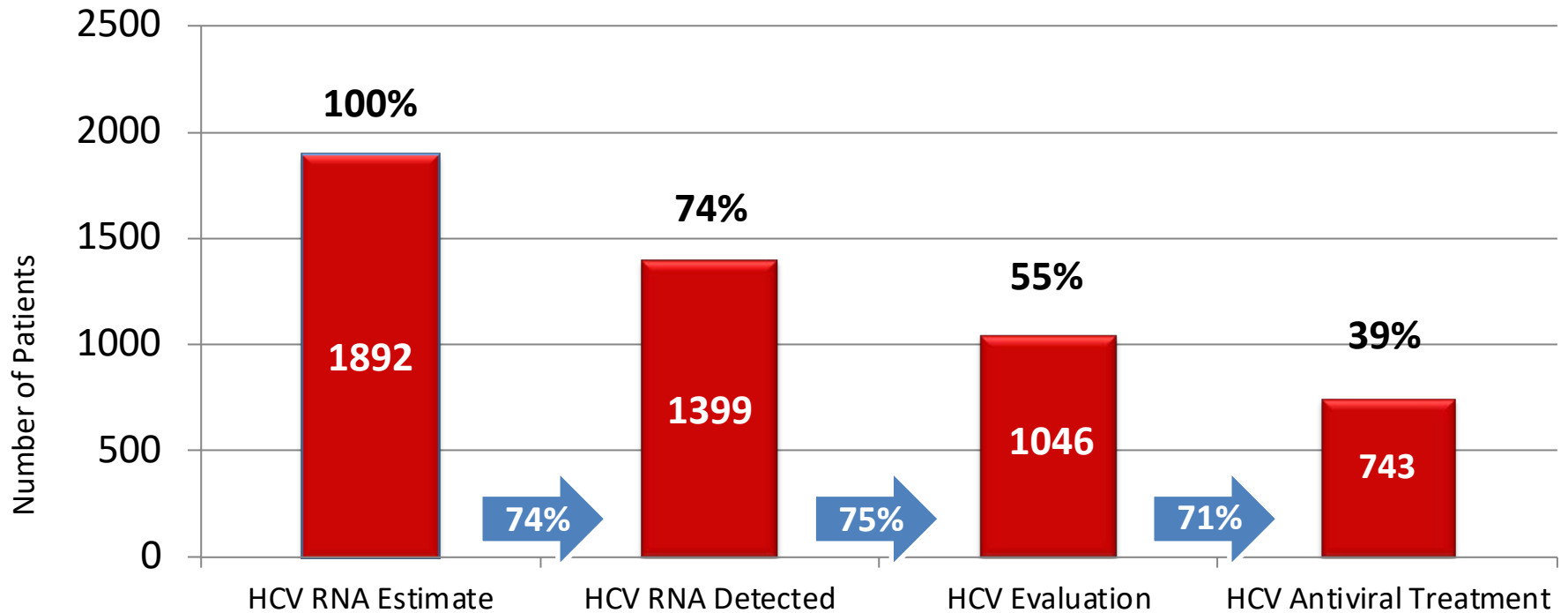
- SSP and MAT effective in reducing self-reported injecting risk behaviour
 - Limited evidence for effect on HCV transmission^{1,2}
- New Cochrane systematic review³
 - MAT alone decreases risk by 50%
 - SSP alone decreases risk by 56% (in Europe)
 - **MAT + SSP jointly decreases risk by 71%**



CNHS HCV Cascade of Care 2012



CNHS HCV Cascade of Care 2017



Conclusions

- Elimination of HCV is possible by the year 2030
- Effective interventions are available
- If logistic, political or “other” challenges are present
 - *HCV Micro-elimination can be the answer*
- Priority issues must be addressed to meet elimination goals
- Planning and commitment can accelerate the process
- The CNHS HCV elimination program is based on
 - Universal Screening
 - Robust primary care work force (projectECHO)
 - Harm reduction interventions Treatment as prevention/Medication assisted therapy

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