

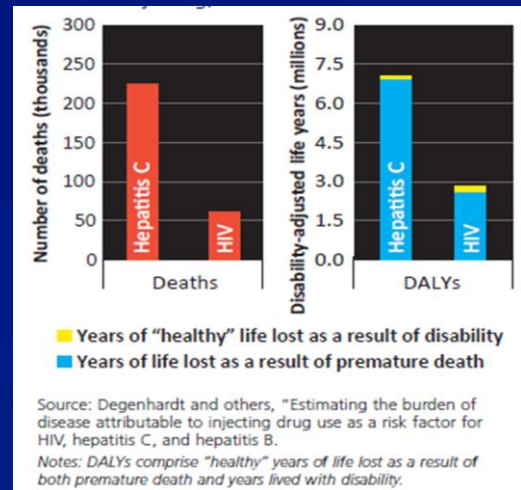
Concrete Actions to Eliminate Hepatitis C Virus Infection Among People Who Inject Drugs

John W. Ward, MD
Division of Viral Hepatitis
Centers for Disease Control and Prevention

1

Global Epidemiology of HCV among Persons Who Inject Drugs

- **Persons with HCV - 71.1 million**
 - PWID 6M (8% of global burden); 1.36M HIV/HCV
 - US- 17% of global HCV /PWID burden
- **HCV annual incidence – 1.7M**
 - PWID 390,000 (23%)
- **12 million PWID globally**
 - 50% HCV infected
- **Deaths attributable to HCV among PWID exceeds deaths from other causes related to drug use**

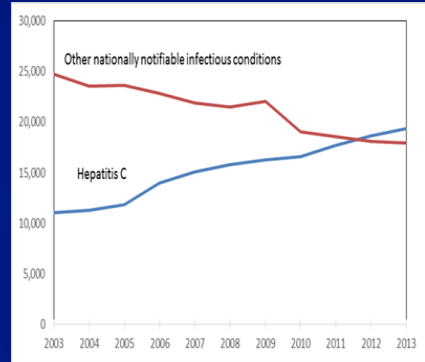


2

Epidemiology of HCV among Persons Who Inject Drugs- United States

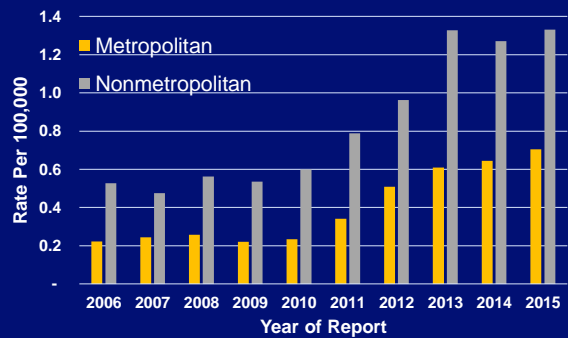
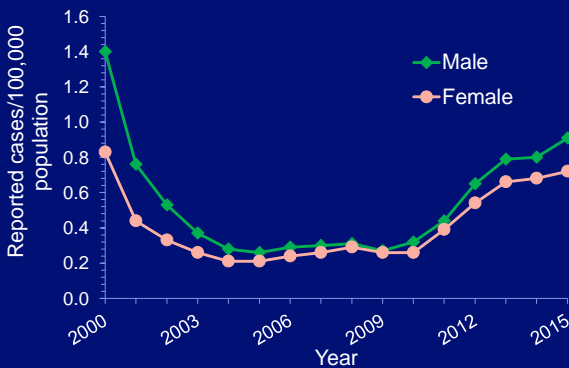
- ❑ **Persons with HCV- 3.5 M (2010)**
 - 1.3M (37%) with history of injection drug use
 - 1.75 (49%) – no reported risks for HCV infection
- ❑ **New HCV infections – 33,900 (2015)**
 - 39% provide risk information; 80% cite injection drug use
- ❑ **HCV incidence among active/recent PWID: 23/100PY**
- ❑ **Number of life time PWID – 6.6 million**
- ❑ **Number of persons injecting in past year- 775,000**
 - Recent PWID with HCV- 334,000 (43%)

Rising HCV mortality- 19,629 Deaths (2015)



CDC.gov/hepatitis; Lansky A, PLoS One 2014; Nelson PK, Lancet 2011; Hagan et al. 2010; Amon et al. 2008;; Daniels et al. 2007; Amon et al. 2008; Weissing L, PlosOne 2014; Grebely PLOS ONE 2014; Clatts MC, J Urban health 2010; Page Clin infect dis, 2013

Increases in HCV Incidence- United States

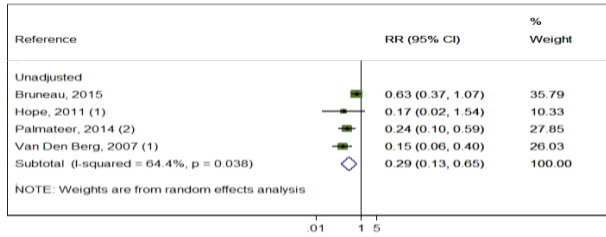


- ~31,000 new HCV infections in 2015
- 1:1 male: female ratio, predominantly white
- Highest incidence- 20-29 years, non-urban areas

Suryaprasad, CID 2014, Zibbell MMWR 2015, CDC unpublished data

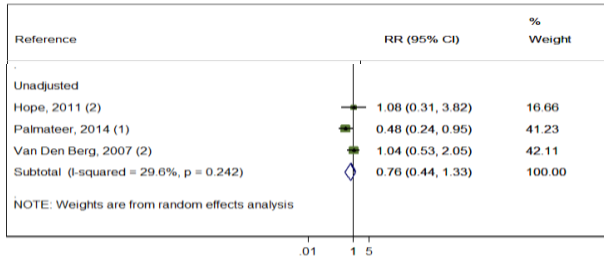


Impact of Needle Syringe Programs and Opioid Substitution Therapy



High NSP with OST

- 4 studies
- 3356 participants
- 518 HCV cases
- **Reduced HCV by 71%**
- moderate heterogeneity



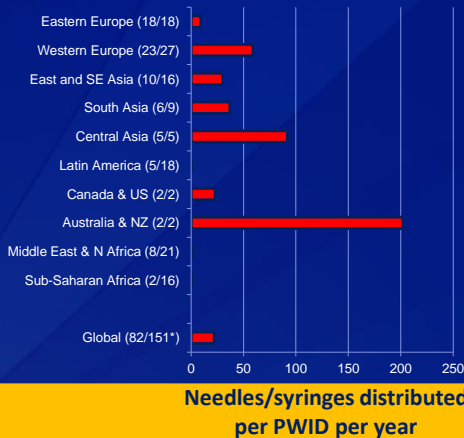
Low NSP with OST

- 3 studies
- 3071 participants
- 449 HCV cases,
- **Reduced HCV by 24%**
- GRADE: low evidence

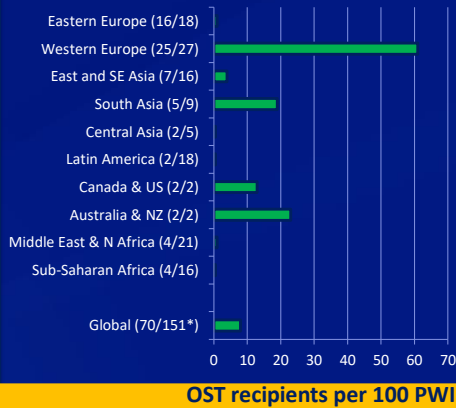
bristol.ac.uk

Regional and Global Estimates of the Coverage of Risk Reduction Strategies

NSP Coverage



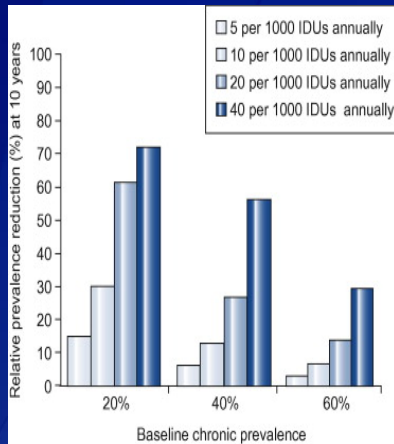
OST Coverage



* (Number of countries reporting implementing OST, of those with injecting drug use identified)

Courtesy of S. Hutchinson

Antiviral Therapy Can Reduce HCV Prevalence Among Persons Who Inject Drugs



- Annually treating 10 HCV infections per 1000 IDU and achieve SVR of 62.5%
- Projected to result in a relative decrease in HCV prevalence over 10 years of 31%, 13%, or 7% for prevalences of 20%, 40%, or 60%, respectively
- HCV Cure as Prevention



Martin et al. Journal of Hepatology 2011 vol. 54 | 1137–1144

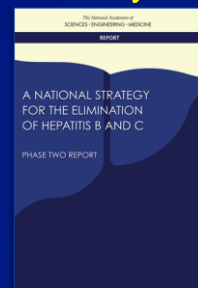
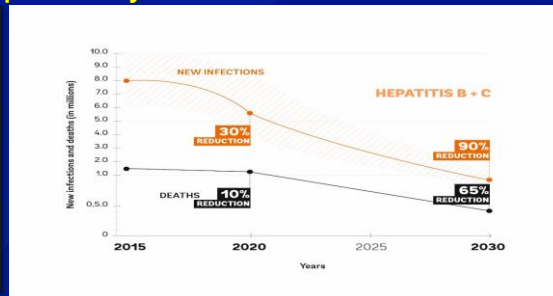
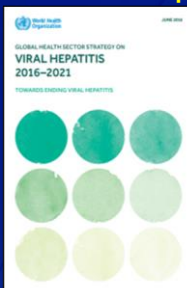
Injection Drug Use and HCV Status Quo

- Cause of substantial morbidity and mortality
- Major cause of new infections particularly in the US
- Interventions are available to prevent risks exposures
- Cure of HCV can improve prevention effectiveness
- Multiple barriers limit access of PWID to prevention and treatment services

Concrete Steps to Advance Progress Toward HCV Elimination Goals for PWID

- Awareness and advocacy
- Data for decision-making
- Prevention and treatment capacity
- Research and development

Global and National HCV Elimination Goals A Rare Opportunity to Build Awareness and Advocacy



Elevates the national vision of what is possible with commitment and resources

Opportunities to engage new partners in disease elimination

Provides targets to evaluate progress toward elimination goals

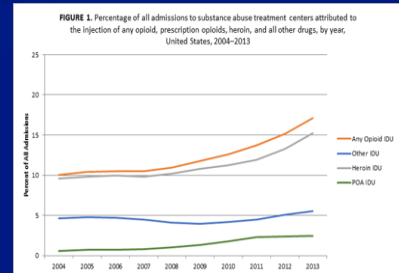
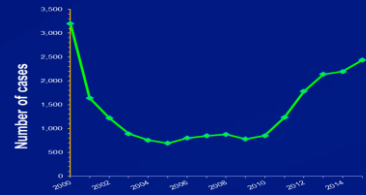
Begin to cite goals as expectations; revise program goals and performance targets

Update national viral hepatitis strategic plans to align with elimination goals (CDC, in progress)

Increase Awareness of HCV as Morbidity Related to the Opioid Crisis

- 76% of young persons (<30 years) with acute HCV in US report use of prescription opioids
- *Commission on Combating Drug Addiction and the Opioid Crisis*
 - No mention of HCV or other blood borne pathogens
 - No mention of safe injection programs
- Few media reports link HCV to opioid epidemic
- Cost of HCV drugs are exaggerated

Engage in public policy development and media relations

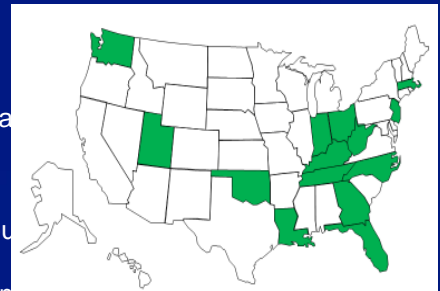


Suryaprasad AG, et al CID 2014; <https://www.whitehouse.gov/sites/whitehouse.gov/files/ondcp/commission-interim-report.pdf>

Strengthen Case Surveillance in States with High Rates of New HBV and HCV Infection

- Challenge: Poor surveillance infrastructure
- In 2017, CDC prioritized surveillance funds to 14 states
- Objective: Timely and more complete data to:
 - Inform stakeholders of transmission trends
 - Guide investigations of transmission networks and outbreaks
 - Guide implementation of prevention services
- Develop surveillance registries (Inform estimates of disease burden)
- Promote HCV testing for PWID (ED, drug treatment, corrections)

State Core Surveillance Grantees, 2017



The funded states represent >70% of the acute hepatitis B and hepatitis C cases reported in 2014

Seek increase in capacity for all states
Move to reporting all HCV tests (detect serologic changes)

Improve HCV Detection among Pregnant Women

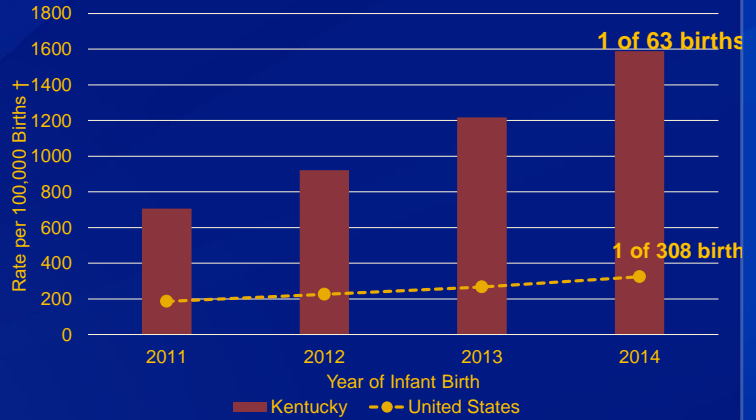
Increases number of HCV infected pregnant women

1700 new HCV infections among newborns (2015)

Birth certificate data- new surveillance source

Case definition for perinatal HCV- 1/1/18

Prioritize maternal infant transmission in education, surveillance, policy development and program services



MMWR, 2016

Apply New Technology to Investigate Patterns of HCV and HIV Transmission Among PWID



Lab (NGS) technology identifies similar viral strains indicative of transmission links

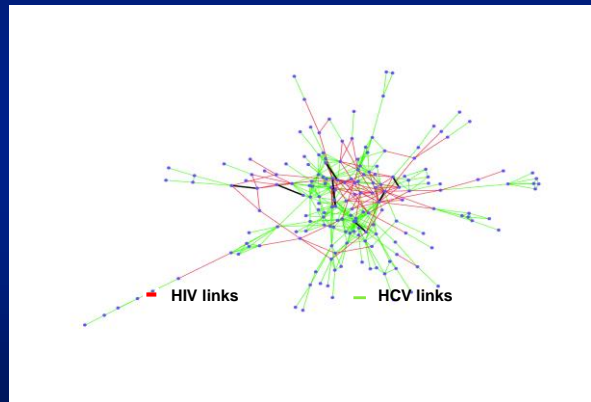
Increase prevention efficiency/effectiveness

GHOST- Cloud based tool makes this technology available to states

22 states completed/ scheduled training

Begin studies of transmission networks

Patterns of HCV and HIV transmission- Scott County IN



NGS= next generation sequencing

CDC unpublished data



Target Serologic Surveys to Reach At Risk Populations

Sites for National HIV Behavioral Surveillance
among Persons Who Inject Drugs

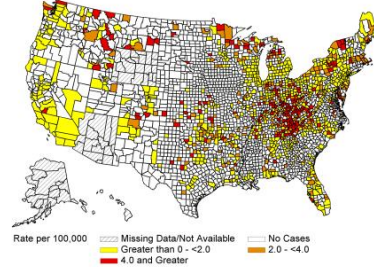
22 Metropolitan Statistical Areas



CS: Plans for 2018

- Improve recruitment of young (<30 years) PWID
- Include HCV testing
- Expand recruitment outside of urban core

Reported Cases of Hepatitis C, by County,
United States, 2013 and 2014 Combined

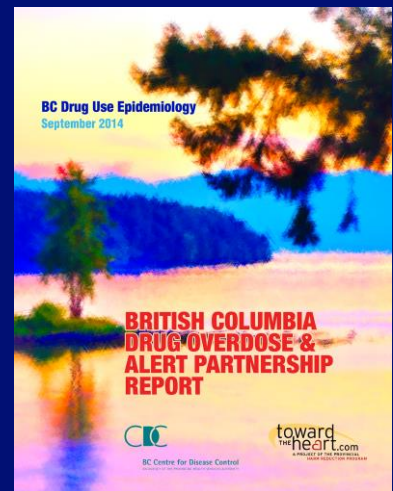


CS: Considerations: to respond to HCV epidemics

- Add ongoing sentinel sites in low HIV/high HCV incidence areas
- Add one-time rapid risk assessments
- Develop a separate NHBS for HCV

Comprehensive Reports on Trends in HCV Risks and Status of Prevention Services

- ❑ HCV testing and surveillance data
- ❑ Number of syringes, other equipment distributed per PWID
- ❑ Injection equipment sharing practices
- ❑ Number receiving MAT
- ❑ Supervised injection facility



<http://www.bccdc.ca/resource-gallery/Documents/Statistics%20and%20Research/Publications/Epid/Other/FinalDOAPReport2014.pdf>

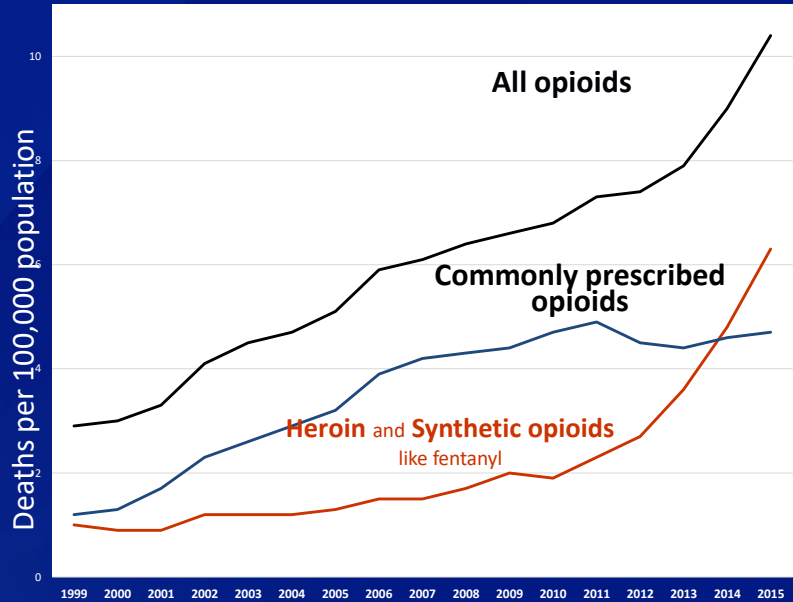
Participate in Activities that Reduce Overdose Deaths

Changes in prescription practices

Access to MAT

Naloxone availability

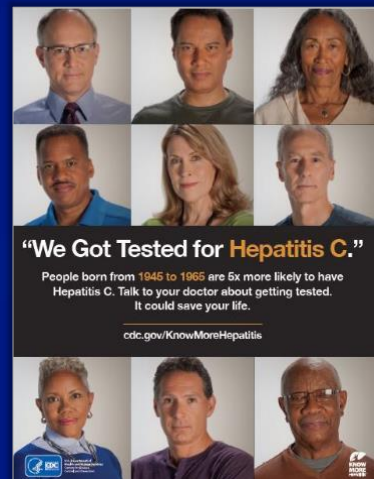
Public education



SOURCE: National Vital Statistics System Mortality File.

Update Laws and Policies to Improve HCV Testing and Linkage to Care

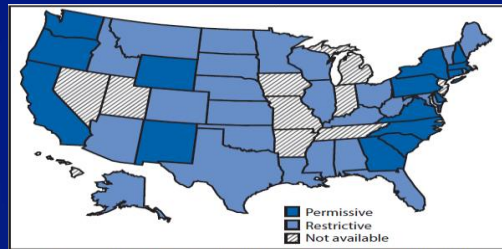
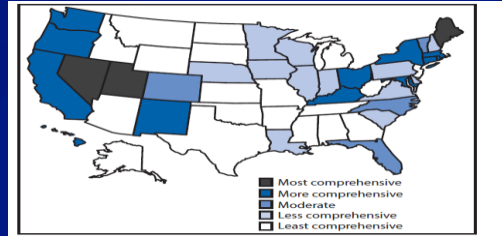
- Half of persons unaware of HCV status
- Risk based + demographic based testing is most effective
- New policies for HCV testing
 - All adults (cost effective compared to birth cohort testing)
 - Pregnant women (can be merged with HIV, HBV testing)
 - Incarcerated populations
 - PWID- frequency of testing
- Disseminate evidence based tools for implementation



Denniston M, Hepatology 2014; Mahajan R, AJPH 2013; Rein D, EASL 2017

Update Laws and Policies to Improve Access to HCV Prevention, Testing and Linkage to Care

- Increase number of states permitting SSP, paraphernalia possession, and pharmacy sales
 - Only three states have most supportive laws
- Remove all restrictions for HCV treatment of PWID; 24 Medicaid programs have sobriety restrictions
- HCV treatment is cost-saving
 - Costs \$17K-40K; new drug \$26K
 - <\$40K cost saving from societal perspective
 - \$10-15K- cost savings within 10 years
- Require HCV test and cure in drug treatment programs and available in safe injection programs



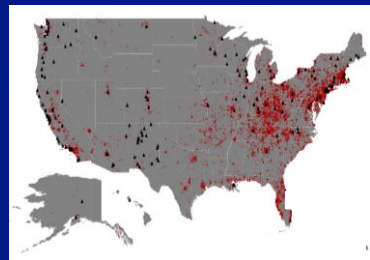
Campbell C, MMWR 2017, CDC unpublished data

Expand Access to Syringe Exchange and Opioid Agonist Therapy

“Syringe exchange, opioid agonist treatment are cornerstones of viral hepatitis elimination”

- 270 syringe service programs (SSP) in operation (early 2017)
- Approximately 2,200 additional programs needed for proximal access to syringe services
- 29 states/counties approved to redirect USG funds to support SSPs
- HCV prevention for PWID should be become an expected and funded public health service
- Projected average annual budget: \$450K

Only 20% of persons 15-29 yrs. with HCV, live within 10 miles of a syringe service program.



HCV Cases: LabCorp and Quest commercial laboratories

SSPs: SSPs: North American Syringe Exchange Network

P Vickerman unpublished data; North American Syringe Exchange Network, unpublished data; Canary L, CID, 2017; CDC unpublished data

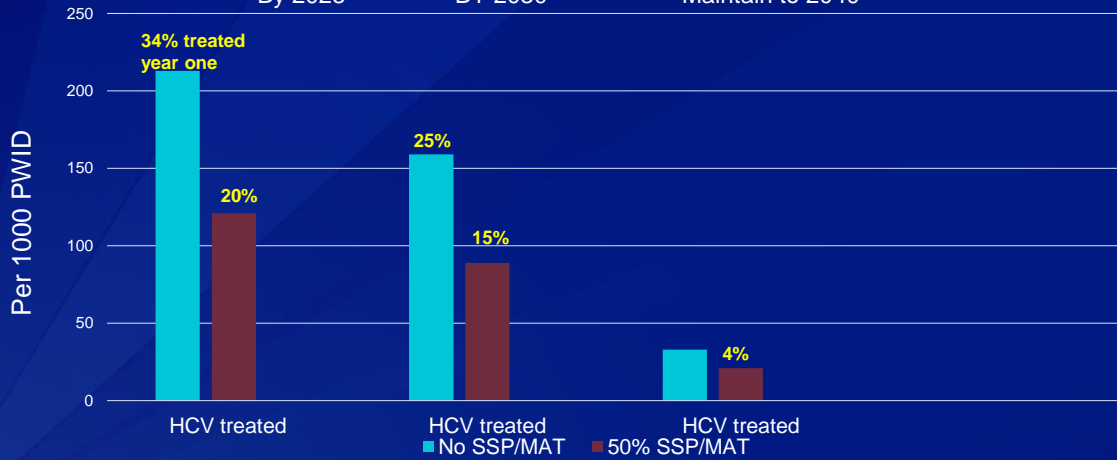
SSP+ MAT+ HCV Testing and Cure to Achieve Targets for HCV Elimination

90% reduction in HCV incidence and prevalence

By 2025

BY 2030

Maintain to 2040



SSP= syringe service program ; MAT= medication assisted therapy

Fraser H, Addiction 2017

21

Develop Comprehensive Community-level Programs to Prevent Substance Abuse-related Transmission of HCV and Other Blood-borne Infections

- **Programs need to provide an array of services to prevent HCV**
 - Clean syringes alone are only partially effective
 - Access to other safer injection equipment is needed (e.g., cookers)
 - Referral to MAT increases prevention effectiveness
 - Cure of HCV to prevent HCV transmission
- **Programs must have sufficient capacity to have public health impact**
 - Capacity to deliver sufficient services (supplies, hours of availability)
 - Community support - (e.g., public safety, civil society, PWID community)
 - Appropriate strategies (e.g., supervised injection, pharmacy sales)
- **Programs must be located to meet at risk persons where they are**
 - Co-locate HCV prevention and treatment services (e.g., SSP, MAT)
 - Address competing demands (e.g., housing)

22

Master Settlement Agreement (MSA) for Substance Abuse Prevention?

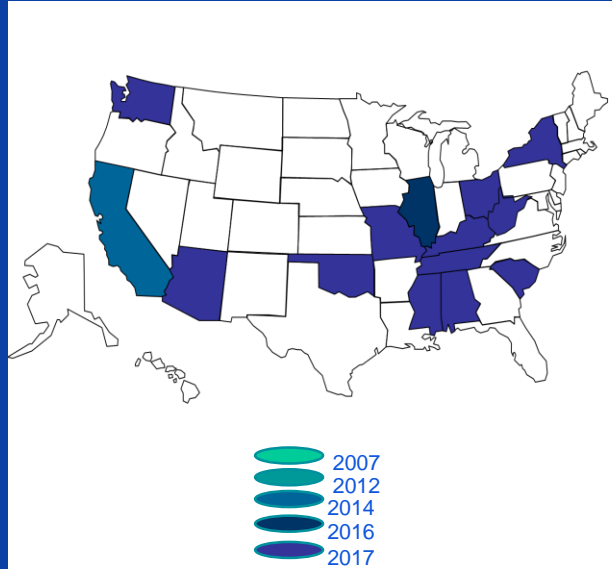
In 1998, tobacco companies reached a MSA with 46 states to compensate public health-care costs connected to tobacco-related illness in perpetuity

In 2015, states received \$150 M in revenue from MSA settlement and tobacco taxes; ~ 40% directed to health care and tobacco costs

States filing suit against opioid manufacturers, distributors, and prescribers (fraud, public nuisance)

Former state AG who created MSA advising state suits

Example: WV received \$27M in 2017



<http://www.publichealthlawcenter.org/sites/default/files/resources/tlc-fs-msa-overview-2015.pdf>

Elimination of HCV in Correctional Facilities is Critical to Success

Prevent transmission

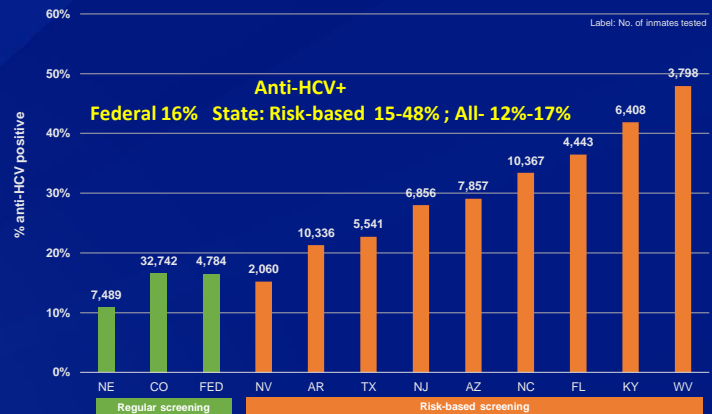
- Syringe services, MAT, HCV cure
- Testing for HCV infection –
 - Sequence- entry, exit
 - Target- universal, risk based, Frequency

Prevent HCV Disease

- Affordable HCV tests, medications
- Care models with provider education
- Care referral on release

HIV programs expand to test/cure HCV

- Law suits in 10 states for HCV treatment access; class action certification



CDC.MMWR 2003 , Canary L, APHA 2016; CDC unpublished data

Prevention Research to Improve HCV Prevention Among Persons Who Inject Drugs

- Develop a research agenda in collaboration with affected populations and service providers
- First line licensed tests for current HCV infection (HCV core antigen, POC RNA)
- New treatment strategies- e.g., long acting injectables (HCV PReP)
- Simplified strategies for HCV treatment of PWID in clinical and outreach settings
- Develop comprehensive, approaches to engage at risk communities and prevent/treat HCV
- Conduct HCV elimination demonstration project(s) in communities with high HCV incidence

Set Health Equity as a Guiding Principle

- **Reduce healthcare-related stigma**
- **Reduce community stigma**
- **Assure incarcerated, homeless, and other marginalized populations have equal access to prevention and treatment services for HCV and other health outcomes related to drug use**

Priorities for Elimination of HCV Transmission Among PWID

- **AWARENESS** of the Health Consequences of the HCV Epidemic among PWID
- **DATA** to Investigate, Respond, and Eliminate HCV Transmission and Disease
- **HCV PREVENTION and Treatment for PWID** as a Routine, Funded Public Health Service
- **INNOVATION** to Improve Prevention Strategies and Implementation
- **HEALTH EQUITY for ALL POPULATIONS** at risk for HCV Transmission and Disease



ACKNOWLEDGEMENTS

Alice Asher
Michele Bohme
John Brooks
Dita Broz
Cecily Campbell
Brian Edlin
Eyasu Teshale