HEPATITIS C SCREENING FOR BEHAVIORAL HEALTH

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OVERVIEW OF PRESENTATION

1. Overview of HCV Epidemiology
2. HCV Transmission and Prevention
3. HCV Treatment
4. HCV Screening
5. HCV for Behavioral Health
6. HCV Resources

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WHY SCREEN FOR HCV?

- Prevalence of HCV in people who inject drugs (PWID) is high: 60+% of HCV cases
- Injection drug use drives today's HCV epidemic: 70+% of new infections in PWID
- Behavioral health providers come into contact with people living with or at risk for HCV every day
- Medication assisted treatment is an essential component to HCV prevention efforts

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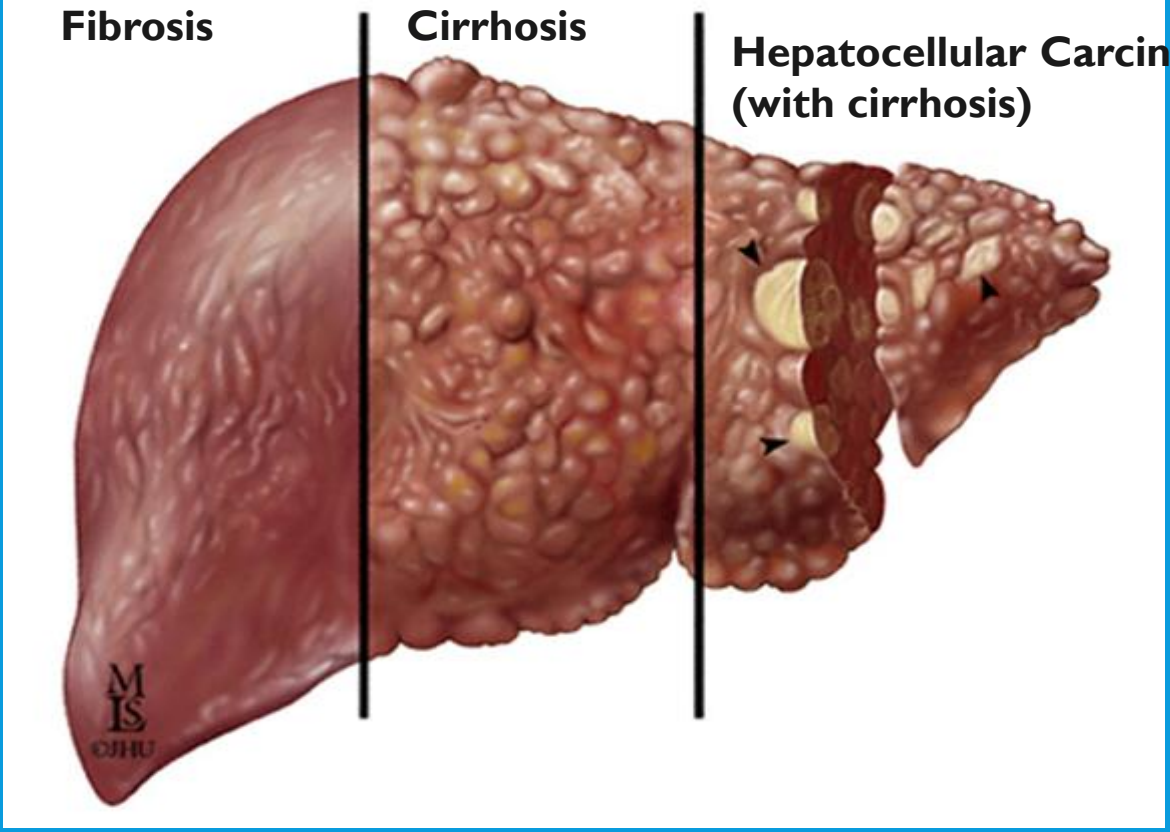
WHY DOES SCREENING MATTER?
CHRONIC HCV MAY LEAD TO END-STAGE LIVER DISEASE AND LIVER CANCER



Identify

↓

Treat

↓

Cure

↓

Prevent ESLD/HCC/Death and new infections

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THE OPIOID EPIDEMIC

- **11.5 million people misused prescription opioids (2016)**
  - 2.1 million did so for the first time
  - 2.4 million had symptoms consistent with opioid use disorder
- **Many people who misuse prescription opioids progress to injection of other opioids (eg, heroin), which has resulted in increases in HIV and HCV**
  - Heroin use increased by 60% from 2002 to 2013
- **Injected opioids have increased bacterial infections (eg, endocarditis, osteomyelitis, and skin/soft tissue infections) (2000 to 2013)**
  - Hospitalizations related to PWID increased from 7.0% to 12.1%
  - Injection-related endocarditis hospitalizations increased from 27.1% to 42.0% in those 15-34 yrs
  - Hospitalizations in whites increased from 40.2% to 68.9%

Slide credit: clinicaloptions.com

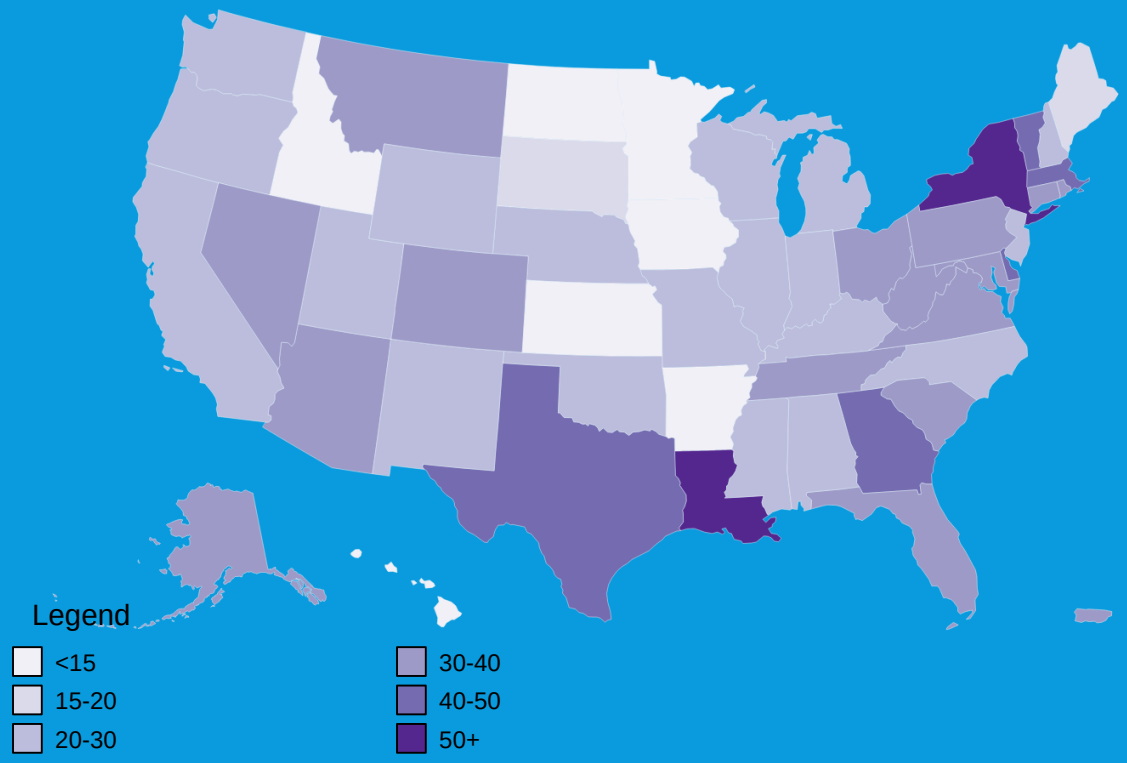
Wurcel AG, et al. Open Forum Infect Dis. 2016. 26;3:ofw157.
CDC. New hepatitis C infections nearly tripled over five years. May 11, 2017. CDC. HIV and injection drug use.

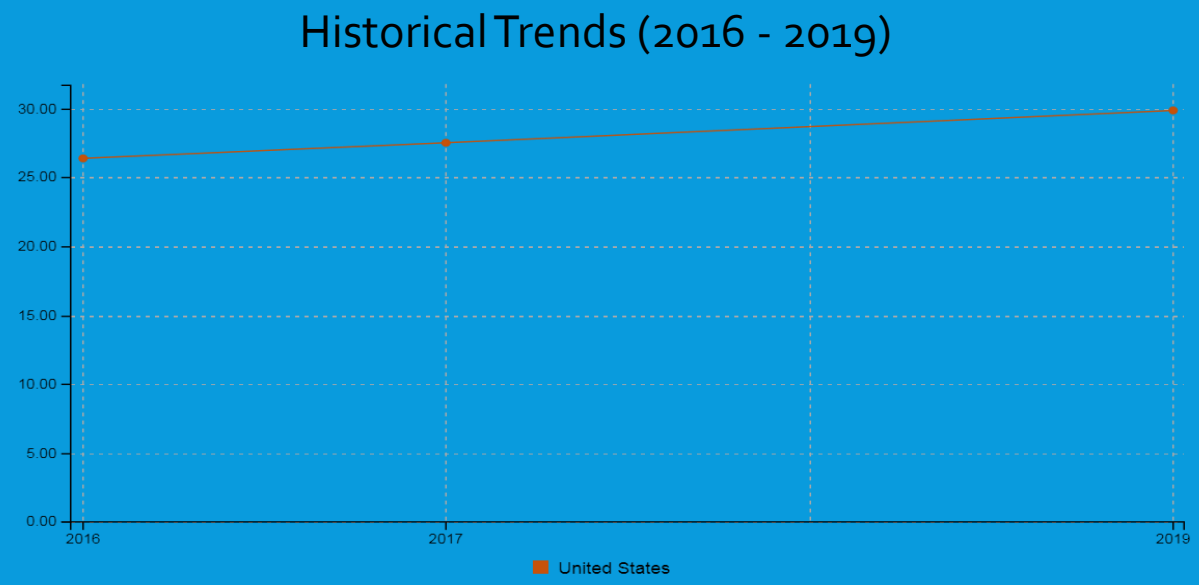
EPIDEMIOLOGY OF HCV AMONG PERSONS WHO INJECT DRUGS - UNITED STATES HCV AMONG PERSONS WHO INJECT DRUGS - UNITED STATES

- **Number of life time PWID – 6.6 million**
- **Number of persons injecting in past year – 886,000**
  - 81,000 used heroin for the first time last year
  - Recent PWID with HCV- 334,000 (43%)
- **HCV incidence among active/recent PWID: 23/100PY**
- **Persons with HCV - 2.4 M (2018)**
- **New HCV infections – 41,000 (2018)**
  - 39% provide risk information; 80% cite injection drug use

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 PLOSONE 2014; Clatts MC, J Urban health 2010; Page Clin infect dis, 2013

PERCENT OF SUBSTANCE USE DISORDER FACILITIES THAT OFFER HCV SCREENING (2019)





opioid.amfar.org

Percent of substance abuse facilities offering Hepatitis C screening
Data Source: Substance Abuse and Mental Health Services Administration.

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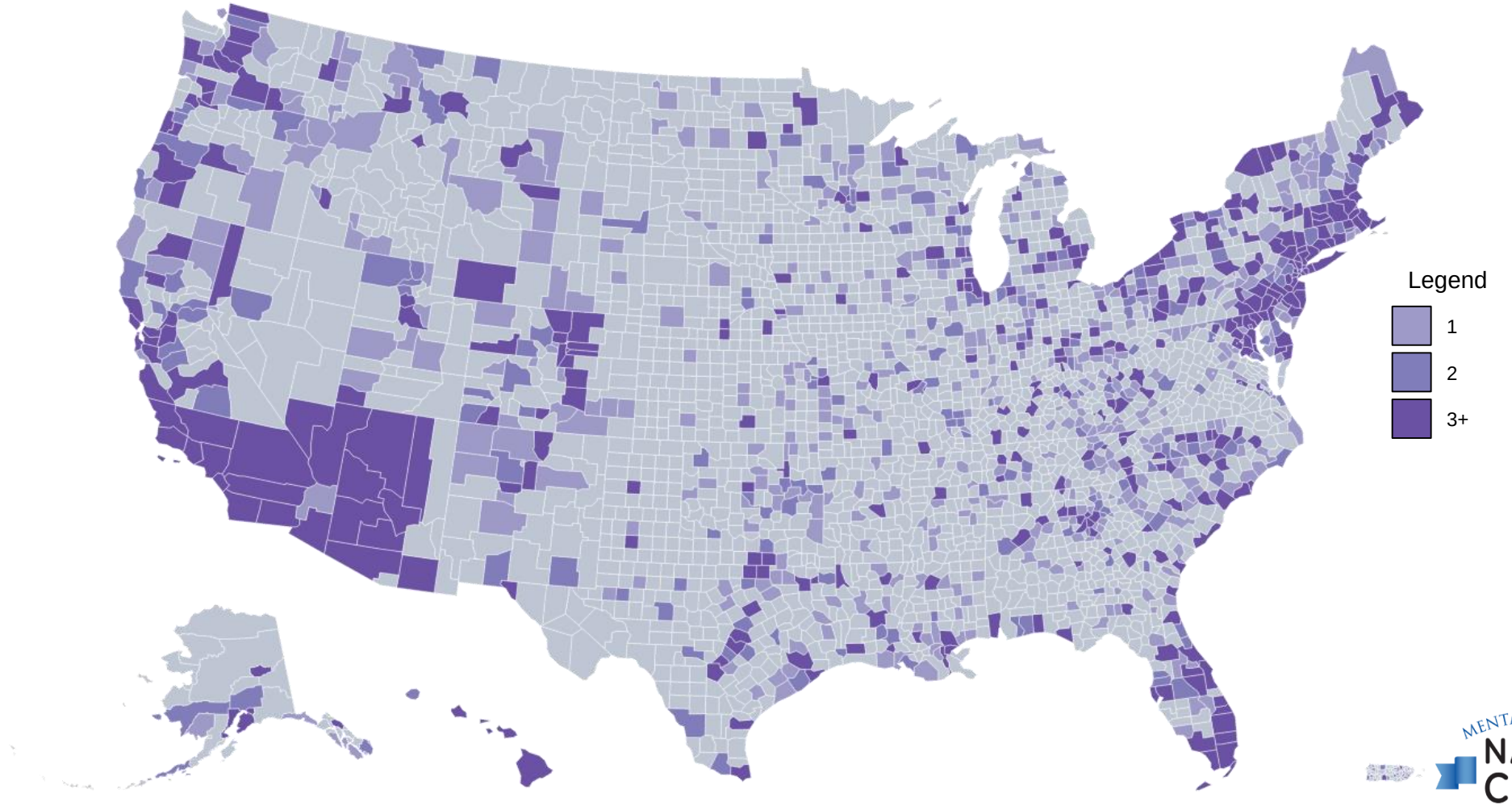
Substance Use Disorder Facilities Offering HCV Screening (2019)

National: 3,940



Number of substance abuse facilities offering hepatitis C screening

Data Source: Substance Abuse and Mental Health Services Administration.

opioid.amfar.org

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Increasing Prescription Opioid Use

Increasing Opioid Injection → HIV and HCV Transmission

Slide credit: clinicaloptions.com

WE HAVE AN EPIDEMIC OF EPIDEMICS

- Hepatitis C (the leading infectious killer in the US)
- Hepatitis B
- HIV (here already)
- Overdoses
- Heart infection (endocarditis)
- Sexually Transmitted Infections
- Neonatal abstinence syndrome (babies born in withdrawal from maternal drug use)
- Increases in mother-to-child transmission of HCV and perinatal syphilis
- Children abandoned, neglected, abused, flooding foster care
- Homelessness

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HEPATITIS C TRANSMISSION

- Blood-to-Blood contact: When one person's HCV infected blood gets into another person

- Can be transmitted from mother to child during birth (5 in 100); higher likelihood if mother is co-infected (17-20 in 100).

- Sexual transmission is rare overall, with a higher risk in HIV-infected persons, especially men who have sex with men (MSM)

HEPATITIS C TRANSMISSION: SHARING OF INJECTION EQUIPMENT

- Sharing syringes can transmit HCV
- HCV can survive in a syringe for up to 63 days
- Sharing of injection equipment—cookers, cotton filters, water, etc—can transmit HCV

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TRANSMISSION VIA CONTACT WITH CONTAMINATED BLOOD: PREPARATION EQUIPMENT

Zibbell J, CDC, Presented as part of Hepatitis C Prevention Opportunities Among PWID, April 28, 2015.

HCV TRANSMISSION

Bloody fingers

Fingers on cooker and in solution

Zibbell J, CDC, Presented as part of Hepatitis C Prevention Opportunities Among PWID, April 28, 2015.

THE EXCEPTIONAL VIRULENCE OF HCV

- HCV can survive in syringes for up to 63 days (Paintsil E, JID 2010);
- HCV can survive on surfaces for up to 16 days and perhaps longer (Doerrbecker J, JID 2013);
- HCV can survive in water for up to 21 days; certain containers—plastic bottles and aluminum cans—can re-infect fresh water even after cleaning (Doerrbecker J, JID 2013);
- HCV can survive in a cotton filter for 24 hours; 48 hours if wrapped in foil (Thibault V, JID 2011);
- HCV has been detected in all manner of drug using equipment: cookers, cotton, water, filters, even alcohol wipes (Thibault V, JID 2011)

NON-INJECTION DRUG USE AND HCV TRANSMISSION

- One review of 28 studies of Non-PWIDs (snort or smoke heroin, crack, cocaine or methamphetamine) found prevalence rates ranging from 2.3% to 35.3% (Scheinmann, et al Drug Alcohol Depend 2007)
- A review of Non-IDUs in San Francisco found a prevalence rate of 17% (Hermanstyne, et al, J Public Health 2012)
- HCV has been found on the stems of crack pipes (Fischer 2008)

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HCV TREATMENTS: NEW MEDICATIONS FOR A NEW ERA!

- We are at a place where easy, well-tolerated and interferon-free, all oral regimen for 8-12 weeks (in rare cases, 24)
  - No interferon injections!
  - All pills
  - Mild side effects that just about everyone can manage
- All genotypes have interferon-free options (no more shots!)

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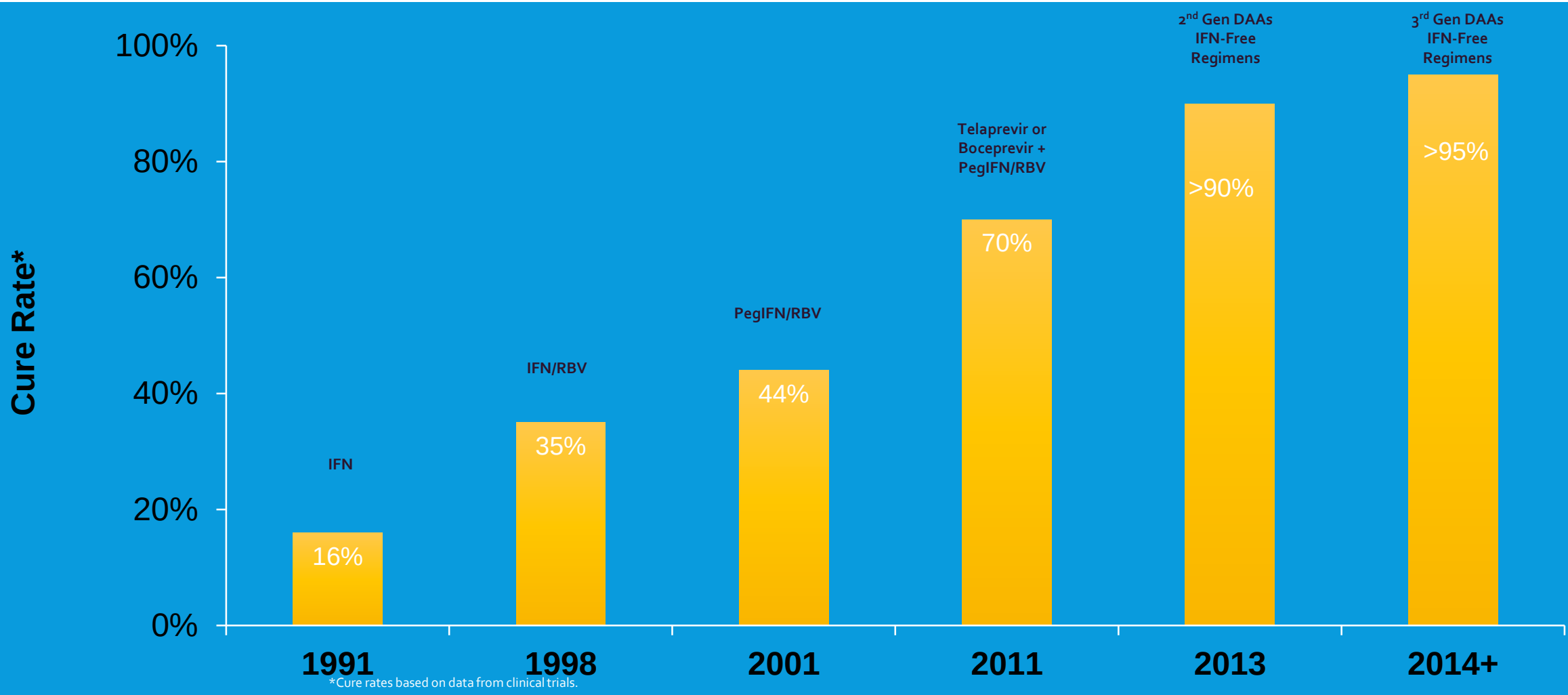
RISING CURE RATES FOR CHRONIC HCV



*Cure rates based on data from clinical trials.

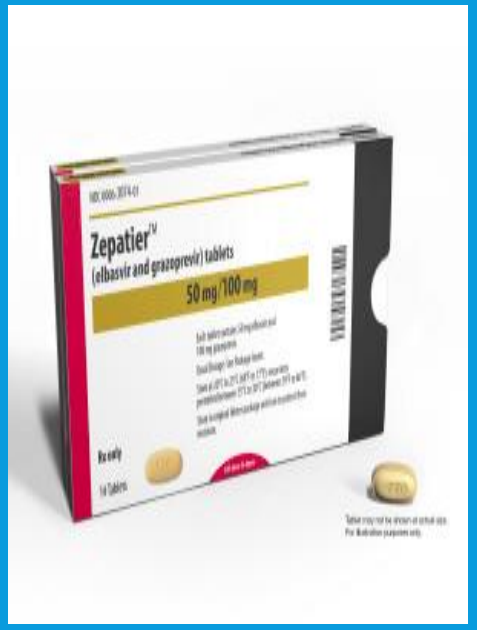
AASLD/IDSA GUIDELINES: WHO SHOULD BE TREATED FOR HCV?

Recommendations for when and in whom to initiate treatment

Treatment is recommended for all patients with chronic HCV infection, except those with short life expectancies that cannot be remediated by treating HCV, by transplantation, or by other directed therapy. Patients with short life expectancies owing to liver disease should be managed in consultation with an expert.

Rating: Class I, Level A

- Everyone!
- Substance use is not a contraindication for treatment.
- For more detailed recommendations regarding HCV in PWID, check out "Recommendations for the management of hepatitis C virus infection among people who inject drugs." J. Grebely, IJDP 26 (2015) 1028-1038



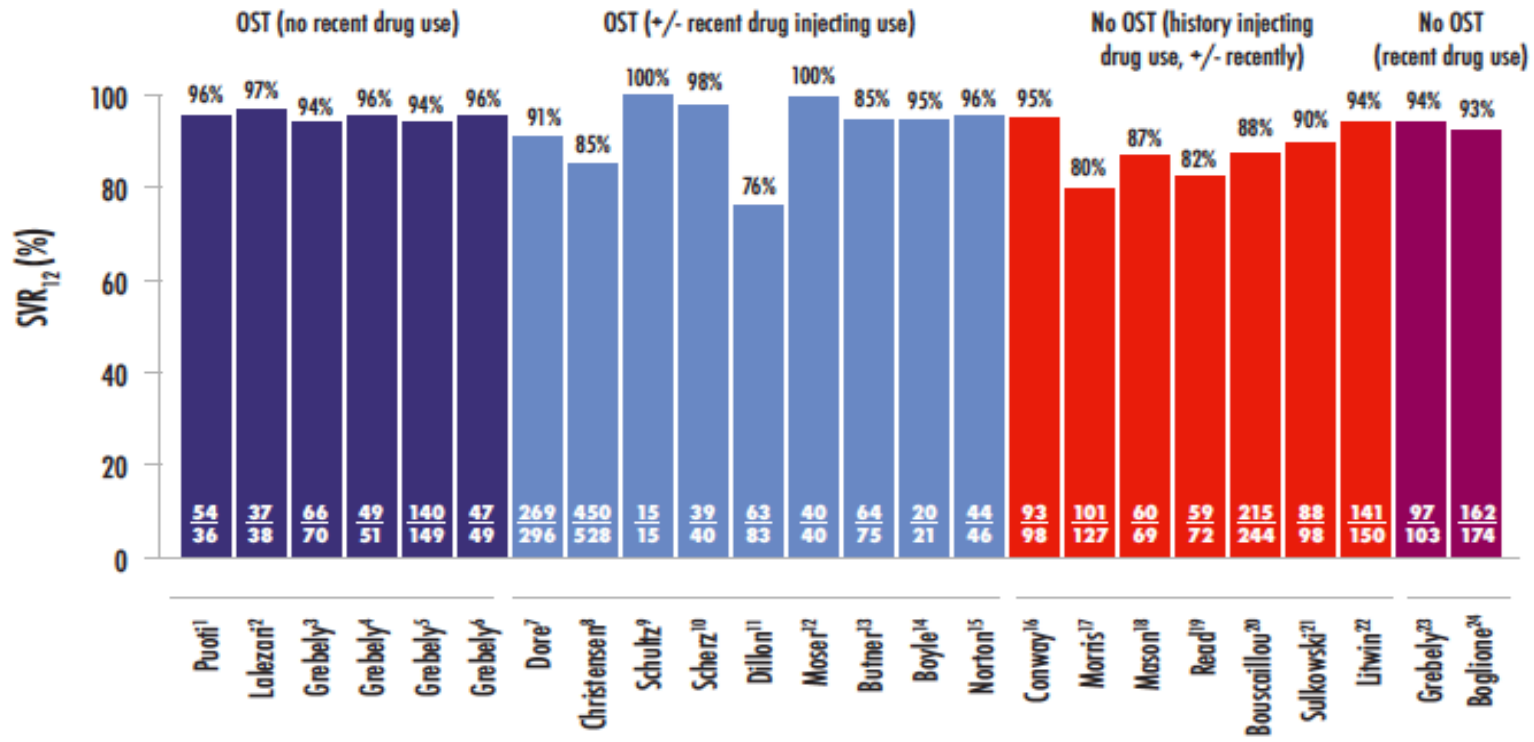
Credit: Gilead Sciences

FDA APPROVED HCV TREATMENTS

Brand Name	Drug Names	Genotype	Company
Zepatier	grazoprevir/elbasvir (GZR/EBR)	1, 4	Merck
Mavyret	glecaprevir/pibrentasvir (G/P)	1, 2, 3, 4, 5, 6	Abbvie
Harvoni	ledipasvir/sofosbuvir (LDV/SOF)	1, 4, 5, 6	Gilead
Epclusa	Sofosbuvir/velpatasvir (SOF/VEL)	1, 2, 3, 4, 5, 6	Gilead
Vosevi	Sofosbuvir/vepatasvir/voxilaprevir (SOF/VEL/VOX)	1, 2, 3, 4, 5, 6	Gilead

CAN PWID SUCCESSFULLY COMPLETE HCV TREATMENT?

Figure 7. SVR12 among people on OST and former/recent PWID[1]



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SIMPLIFY STUDY

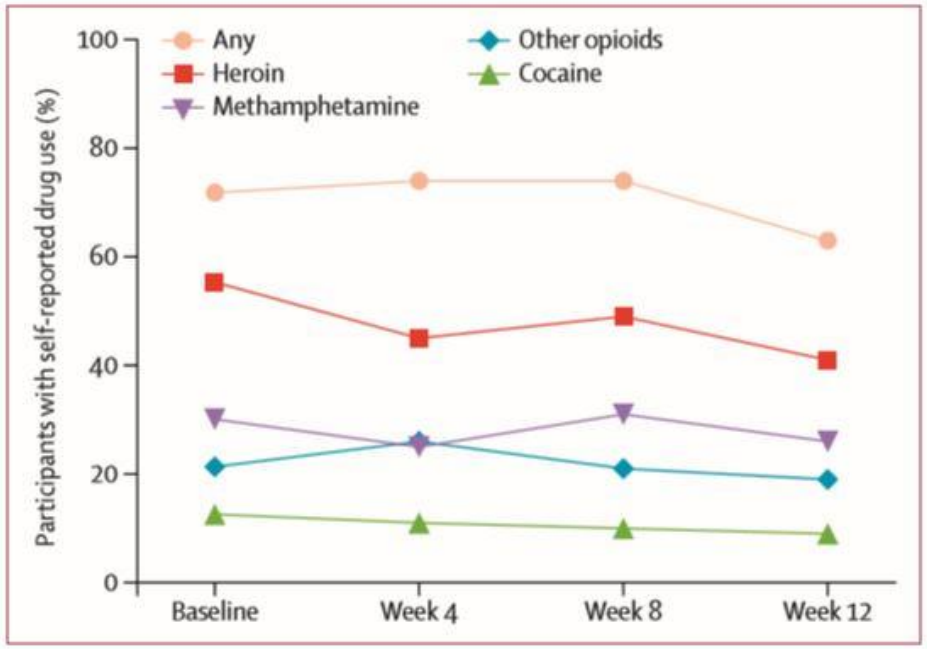

Figure 2: **Self-reported injecting drug use during therapy**
Data for 103 patients at baseline, 100 patients at other timepoints.

DAAs don't require 100% adherence to be effective

SIMPLIFY Study
n=103, SVR 97%

3 treatment failures, 2 LTF

Figure 2: Self-reported injecting drug use during therapy
Data for 103 patients at baseline, 100 patients at other timepoints.

Lancet Gastroenterol Hepatol 2018

doi: 10.1016/S2468-1253(17)30404-1

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SCREENING RECOMMENDATION TIMELINE

- 1998: CDC recommends risk based testing

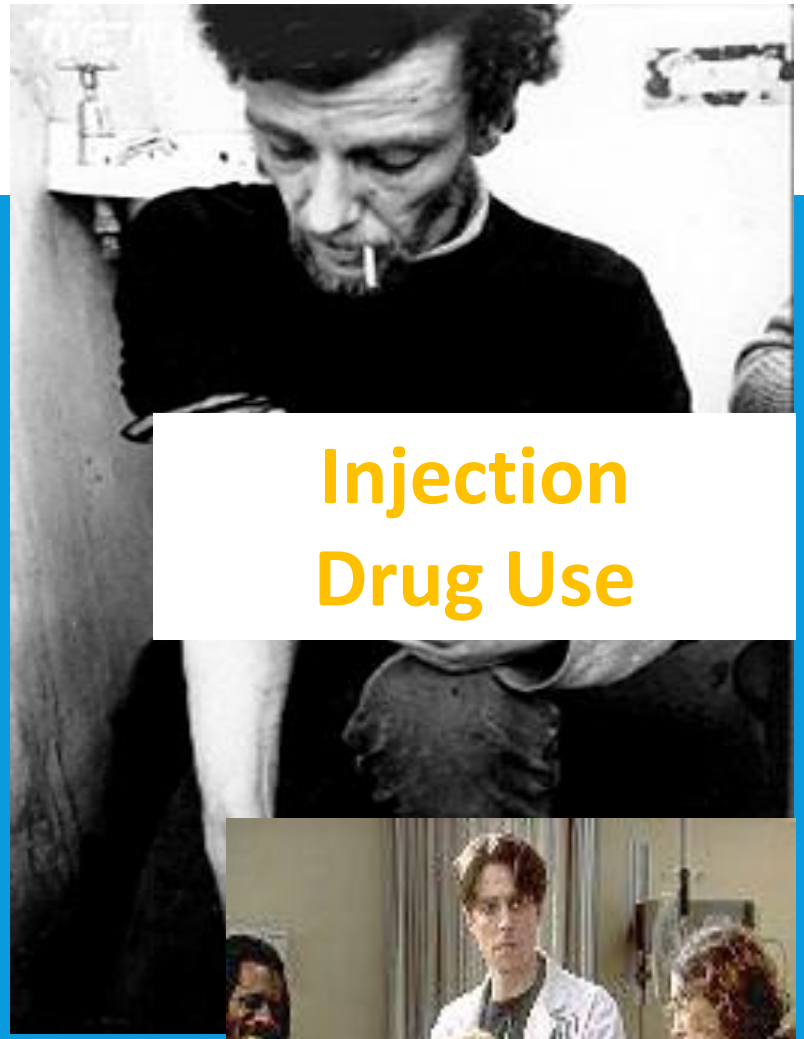
- 2012: CDC expands recommendations to include one time screening for Baby Boomers

All people born between 1945-1965 should receive one time testing for HCV without prior ascertainment of risk factors

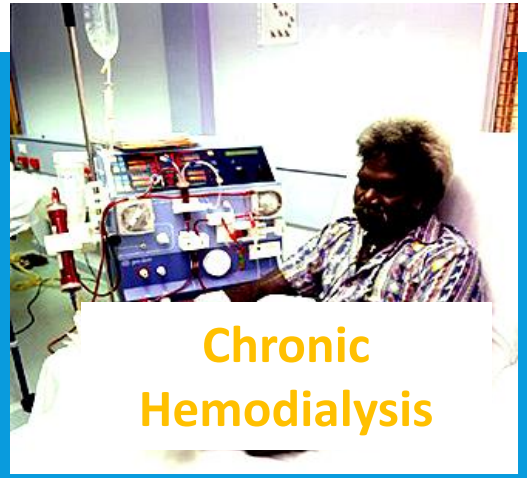
Source: CDC and Prevention. MMWR. 2012. RR61:1-32

Risk Factors for HCV acquisition

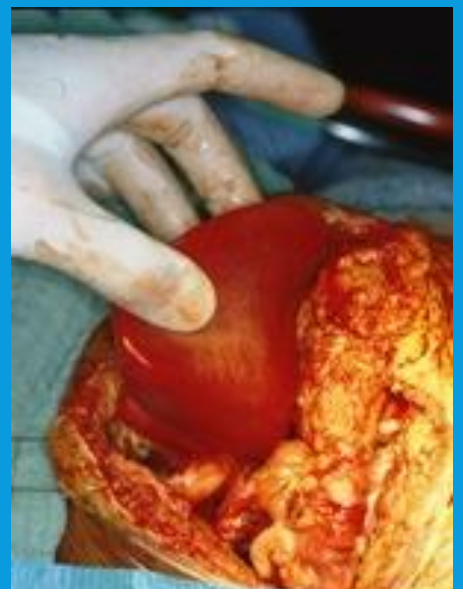
Blood Transfusion



Injection Drug Use



Chronic Hemodialysis



Organ Transplantation

Occupational Exposure

Perinatal

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AASLD/IDSA RISK BASED SCREENING RECOMMENDATIONS

- Long Term hemodialysis (ever)
- Getting a tattoo in an unregulated setting
- Healthcare/occupational exposure to HCV-infected blood
- Children born to HCV-infected women
- Prior recipients of transfusion or organ transplant
  - Notified that they received blood from HCV+ donor
  - Blood product or organ transplant prior to July 1992
  - Clotting factor concentrate produced before 1987
- Persons who were ever incarcerated

- Injection Drug Use (current or ever)
- Intranasal illicit drug use

Other

- HIV infection
- Unexplained chronic liver disease including elevated ALT
- Solid organ donors (deceased and living)

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Source: AASLD/IDSA Recommendations for Testing, Managing and Treating Hepatitis C (www.hcvguidelines.org)

AASLD/IDSA RISK BASED SCREENING RECOMMENDATIONS

Recommendation for Testing those with Ongoing Risk Factors

- Annual (or more frequent) testing for:
  - Persons who inject drugs (PWID)
  - HIV-seropositive men who have unprotected sex with men
- HCV RNA best test for this as HCV Ab may miss early infection
- Consider annual testing in HIV negative MSM who engage in unprotected sex (case reports of Acute HCV in HIV negative MSM who use PrEP)

Source: AASLD/IDSA Recommendations for Testing, Managing and Treating Hepatitis C (www.hcvguidelines.org)
Source: Volk JE, et al, Clin Inf Dis. 2015 Jun1;60(11).

SCREENING RECS: WHAT'S MISSING?

- People who use non-injectable, smokable drugs (sharing crack or crystal meth pipes)
- HIV-Negative persons who are at risk of sexual transmission
- More specific sexual practices:
  - Fisting
  - Sharing of sex toys
  - Multiple partners
  - Group sex
  - BDSM

HEPATITIS C DIAGNOSTICS: ANTIBODY TESTING

- The first test of a two-test process
- Blood Sample (Rapid test is available)
- Window period is not clearly defined, but antibodies usually appear in 6-8 weeks, sometimes taking as long as 6 months.
- If exposed to HCV and test negative, return in 6 months from exposure for follow-up screen.
- Positive ("reactive") HCV AB tests must be confirmed by an RNA (aka PCR, viral load) test

HEPATITIS C DIAGNOSTICS: HCV PCR TEST (VIRAL LOAD)

- The second test of the two-step process
- Only necessary if the HCV antibody test is reactive ("positive")
- Confirmation test (viral load)
- Tells whether HCV RNA is present in the blood

"Are you still infected?"

"Is the virus still in your blood?"

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ANTIBODY POSITIVE, VIRAL LOAD NEGATIVE

- Meaning of the result
  - Person was infected, but their body got rid of the virus (either through spontaneous clearance or from cure)
- Possibility of reinfection
  - You Can get re-infected with HCV—antibodies to not offer protection!
- Modes of transmission and prevention
  - Sharing injection equipment
  - Sex (if HIV+ and/or engaged in sex with blood)
  - Sharing equipment for intranasal drug use ("snorting")
  - Other blood-to-blood contact (e.g., sharing tattoo needle)

ANTIBODY POSITIVE, VIRAL LOAD POSITIVE

- Person is chronically infected with HCV
- No way to determine length of infection
- Follow-up with a primary care provider is important
- Engage in self care and prevent transmission to others

GLOBAL CALL FOR HCV ELIMINATION

- **WHO vision[1]:** "*Eliminate viral hepatitis as a major global public health threat by 2030*"

2030 Targets

90% Diagnosed

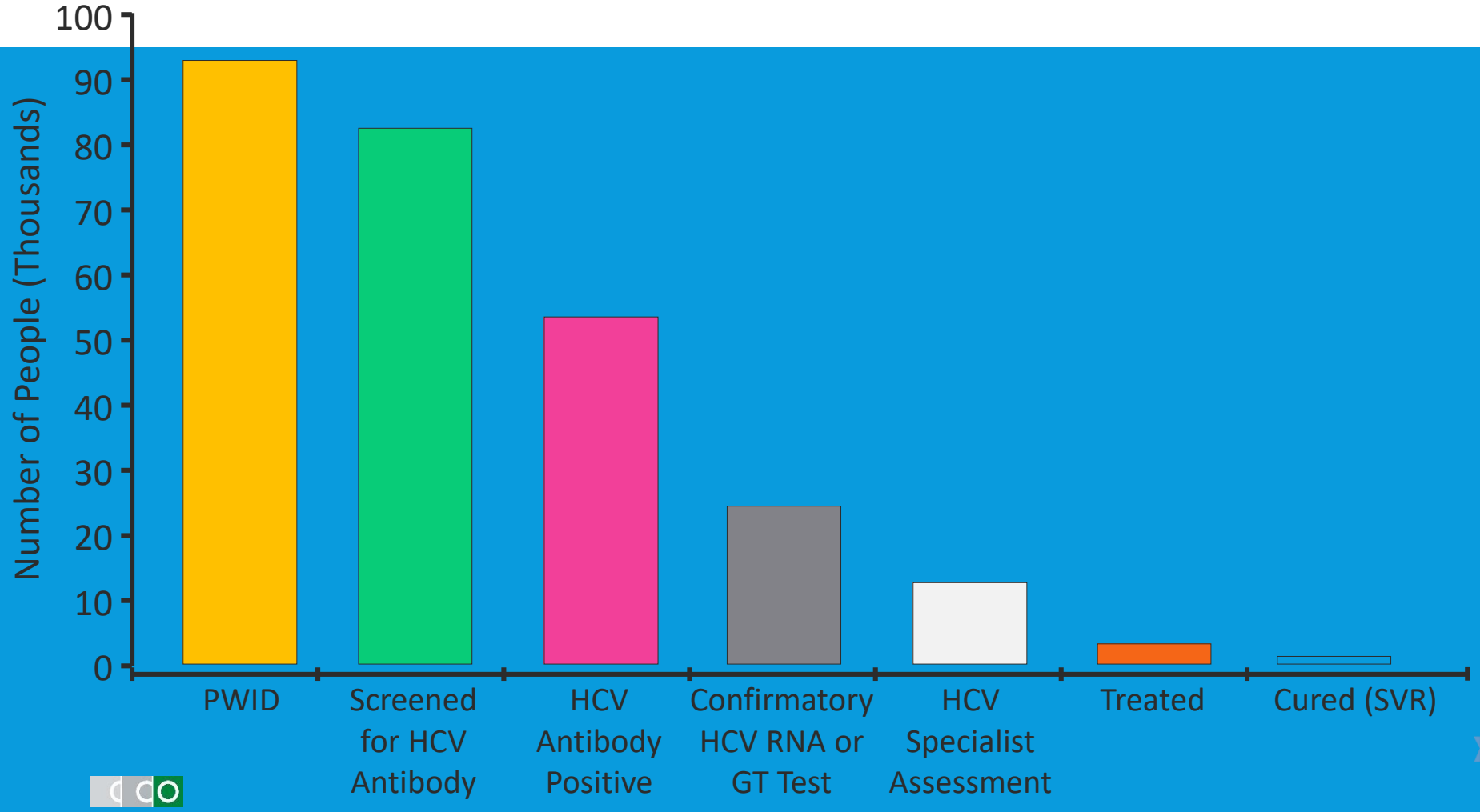
80% Treated

65% Reduced mortality

- **US HBV/HCV Elimination Strategy** (National Academies of Sciences, Engineering, and Medicine)[2]
  - "Elimination" = 90% reduction in incidence by 2030
- **HCV elimination in US not feasible without engaging, treating PWID**
  - 30.5% of all HCV infections in North America are among people with recent IDU[3]

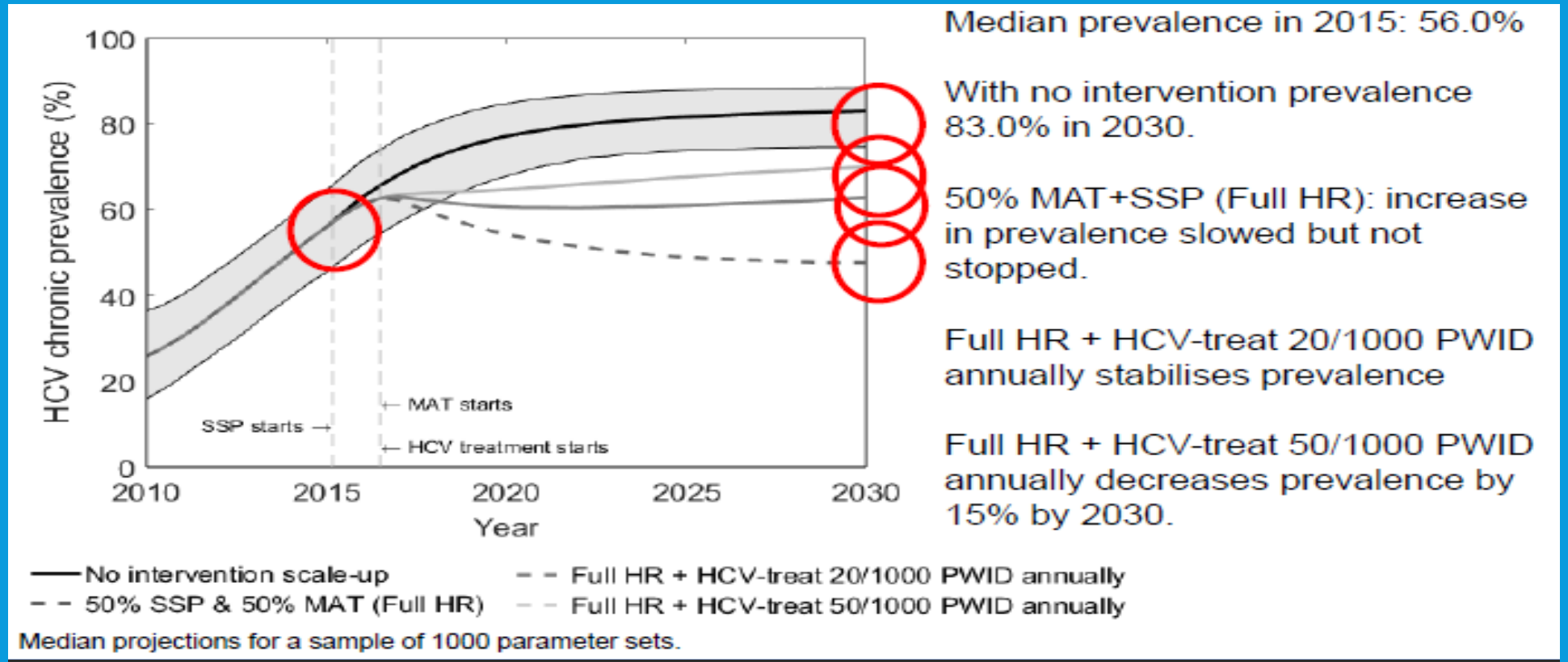
Slide credit: clinicaloptions.com

THE CHALLENGE: HCV CARE CASCADE AMONG PWID



Slide credit: clinicaloptions.com

MAT, SYRINGE ACCESS, AND HCV TX NEEDED TO ELIMINATE HCV



Source: Vickerman P et al., Impact and cost-effectiveness of scaling up HCV treatment and prevention interventions for PWID in the U.S. University of Bristol; 2017.
Key: MAT = medication assisted treatment; SSP = syringe services program; HR = harm reduction.

COORDINATING CARE FOR PWID: MENTAL HEALTH, SUBSTANCE USE DISORDER, AND HEPATITIS TREATMENT

- Meta-analysis of 56 studies, 41 with outcomes on HCV care continuum
- 5 studies evaluated coordinated mental health, substance use disorder, and hepatitis treatment services
- Results showed **improved HCV treatment uptake, treatment completion, and cure** vs usual care

HCV Outcome	OR/RR (95% CI)
Treatment uptake (3 studies)	3.03 (1.24-7.37)
Treatment adherence (4 studies)	1.22 (95% CI: 1.05-1.41)
SVR (5 studies)	1.21 (95% CI: 1.07-1.38)

Slide credit: clinicaloptions.com

MAKING THE CASE FOR HCV CURE INCLUSION INTO A BEHAVIORAL HEALTH PLAN

- It's a disease of the liver, but the impact on mental health is significant
- HCV itself leads to depression, stress, anxiety and other cognitive challenges.
- Addressing HCV and curing it may alleviate—or eliminate--many of these symptoms
- Curing HCV can motivate people to take care of other issues in their life

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HEPATITIS C AND MENTAL HEALTH

Acute HCV	Chronic HCV	Late-Stage HCV w/Cirrhosis
Flu-like symptoms	Fatigue (mild to severe)	Fatigue (mild to severe)
Fatigue (mild to severe)	Fever	Fever
Fever	Loss of appetite	Loss of appetite
Night sweats	Nausea	Nausea
Nausea	Indigestion	Vomiting
Loss of appetite	Headaches	Fluid retention
Vomiting	Muscle or joint pain	Frequent urination
Diarrhea	Abdominal pain	Jaundice
Jaundice	Depression	Indigestion
Indigestion	Mood swings	Headaches
Headaches	"Brain fog"	Muscle and joint pain
Muscle or joint pain		Abdominal pain
Abdominal pain		Abdominal bloating
Abdominal bloating		Depression
		Mood swings
		Cognitive dysfunction
		Lack of concentration
		Mental confusion
		Dizziness

RESOURCES

- HCV Current: https://attcnetwork.org/centers/global-attc/hcv-current-initiative-0
- Harm Reduction Coalition: https://harmreduction.org/
- Clinical Care Options: https://www.clinicaloptions.com/hepatitis?q&sortBy&sortOrder=asc&page=1
- SAMHSA: https://store.samhsa.gov/product/TIP-53-Addressing-Viral-Hepatitis-in-People-With-Substance-Use-Disorders/SMA11-4656

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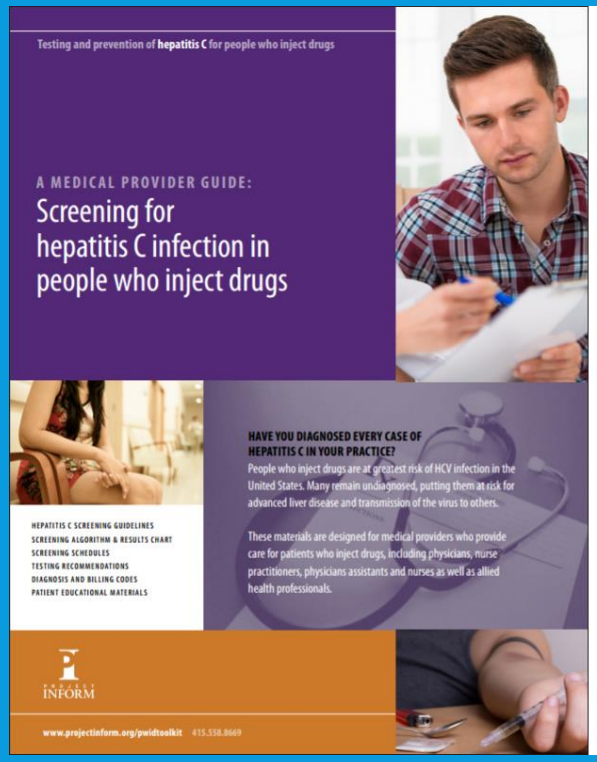
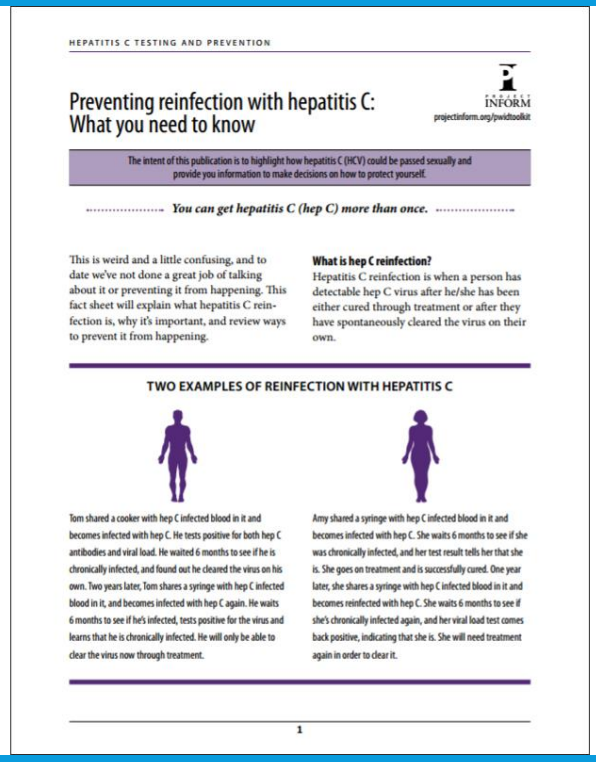
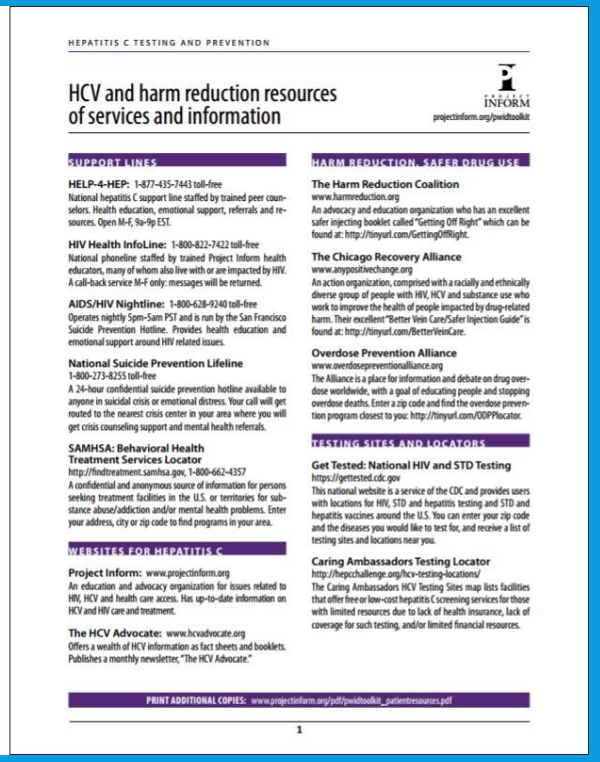
A TOOLKIT FOR SCREENING, COUNSELING AND PATIENT EDUCATION: HEPATITIS C INFECTION FOR PEOPLE WHO INJECT DRUGS







HELP-4-HEP

- Peer-based patient education support phoneline
- Toll free with no costs to the patients
- Open Monday-Friday, 9a -9p.
- Completely confidential
- We provide HCV education, emotional support, referrals to medical care and social services, etc.

DISCUSSION QUESTIONS

1. For those of you who do have HCV screening, how did you implement it? Were there any lessons learned for others on this webinar?

2. Do any of you have medical care on-site, and if so, do you do HCV care? What barriers did you have to overcome to make it happen?

3. What educational and training needs do you think your clinic needs, from administrators to medical providers and from counselors to front desk staff?

4. What other HCV-related topics would you like to learn more about?

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CONTACT INFORMATION

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APPENDIX: EXTRA SLIDES

Helping clients understand their HCV test results

COMMUNICATING RESULTS TO THE PATIENT

- **Not currently infected with HCV**
- **No prior infection**

HCV Ab: Negative

HCV RNA: Negative or Not Done

If recently exposed, HCV RNA should be performed now. If both negative, retest in 6 months.

Source: CDC. Testing for HCV Infection: An update of guidance for clinicians and laboratories. MMWR 2013;62(18).

COMMUNICATING RESULTS TO THE PATIENT

- **Currently infected with HCV**
- **Likely Acute HCV**
  - HCV RNA is positive prior to HCV Ab

- Repeat HCV RNA to exclude false positive

Messages for the patient:

- If + risk factors, likely acute HCV
- Some patients clear on their own, some will go on to chronic infection
- Consult with or refer to Hepatologist for evaluation and to determine if treatment indicated

HCV Ab: Negative

HCV RNA: Positive

Source: CDC. Testing for HCV Infection: An update of guidance for clinicians and laboratories. MMWR 2013;62(18).

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COMMUNICATING RESULTS TO THE PATIENT

HCV Ab: Positive

HCV RNA: Negative

- **Not currently infected with HCV, but exposed in the past**

  Messages for the patient:

  - You previously had an HCV infection that was cleared
    - Spontaneous clearance
    - SVR/Cure with HCV treatment
  - If any high risk activities in past 6 months, retest for HCV RNA 6 months after last potential exposure
  - You can be re-infected if exposed – no immunity to HCV

OR

- **False Positive HCV Ab test (S/C ratio low)**

  Messages for the patient:

  - Your HCV Ab test was positive, but the viral load was negative, indicating you do not have HCV
  - Your HCV Ab test was likely a false positive

Source: CDC. Testing for HCV Infection: An update of guidance for clinicians and laboratories. MMWR 2013;62(18).

COMMUNICATING RESULTS TO THE PATIENT

- **Currently HCV-infected**

  Messages to patient:

  - You are currently infected with HCV
  - You need to be evaluated to assess the severity of liver damage and discuss treatment options. This will include blood tests and imaging studies. Most patients no longer require liver biopsy for evaluation
  - There are many highly effective treatments for HCV currently and most have minimal side effects. You can be cured of HCV.
  - You may require referral to a liver specialist

HCV Ab: Positive

HCV RNA: Positive

Source: CDC. Testing for HCV Infection: An update of guidance for clinicians and laboratories. MMWR 2013;62(18).

COMMON BARRIERS TO HCV TREATMENT AND POTENTIAL STRATEGIES

Barrier	Strategy
Contraindications to treatment (eg, comorbidities, substance abuse, and psychiatric disorders)	Counseling and education • Referral to services (eg, psychiatry and opioid substitution therapy) • Optimize treatment with simpler and less toxic regimens
Competing priority and loss to follow-up	Conduct counseling and education • Engage case managers and patient navigators (HIV model) • Co-localize services (eg, primary care, medical homes, and drug treatment)
Long treatment duration and adverse effects	Optimize treatment with simpler and better tolerated regimens • Education and monitoring • Directly observed therapy (tuberculosis model)

http://www.hcvguidelines.org/full-report/testing-and-linkage-care-table-3-common-barriers-hcv-treatment-and-potential-strategies

COMMON BARRIERS TO HCV TREATMENT AND POTENTIAL STRATEGIES

Barrier	Strategy
Lack of access to treatment (high cost, lack of insurance, geographic distance, and lack of availability of specialists)	Leverage expansion of coverage through the Patient Protection and Affordable Care Act • Participate in models of care involving close collaboration between primary care practitioners and specialists • Pharmaceutical patient assistance programs • Co-localize services (primary care, medical homes, drug treatment)
Lack of practitioner expertise	Collaboration with specialists (eg, via Project ECHO-like models and telemedicine) • Develop accessible and clear HCV treatment guidelines • Develop electronic health record performance measures and clinical decision support tools (eg, pop-up reminders and standing orders)

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