

The SUD / HCV / HIV/ STI Syndemic

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- ECHO Clinic Director
- Northwest Portland Area Indian Health Board



Learning Objectives



Participants will be able to explain the concept of a Syndemic

Participants will recognize the impact of the opioid epidemic in relation to the HIV and HCV epidemics

Participants will be able to describe interventions to mitigate the HIV/STI/SUD/HCV syndemic at a Macro, Micro and individual level

Outline

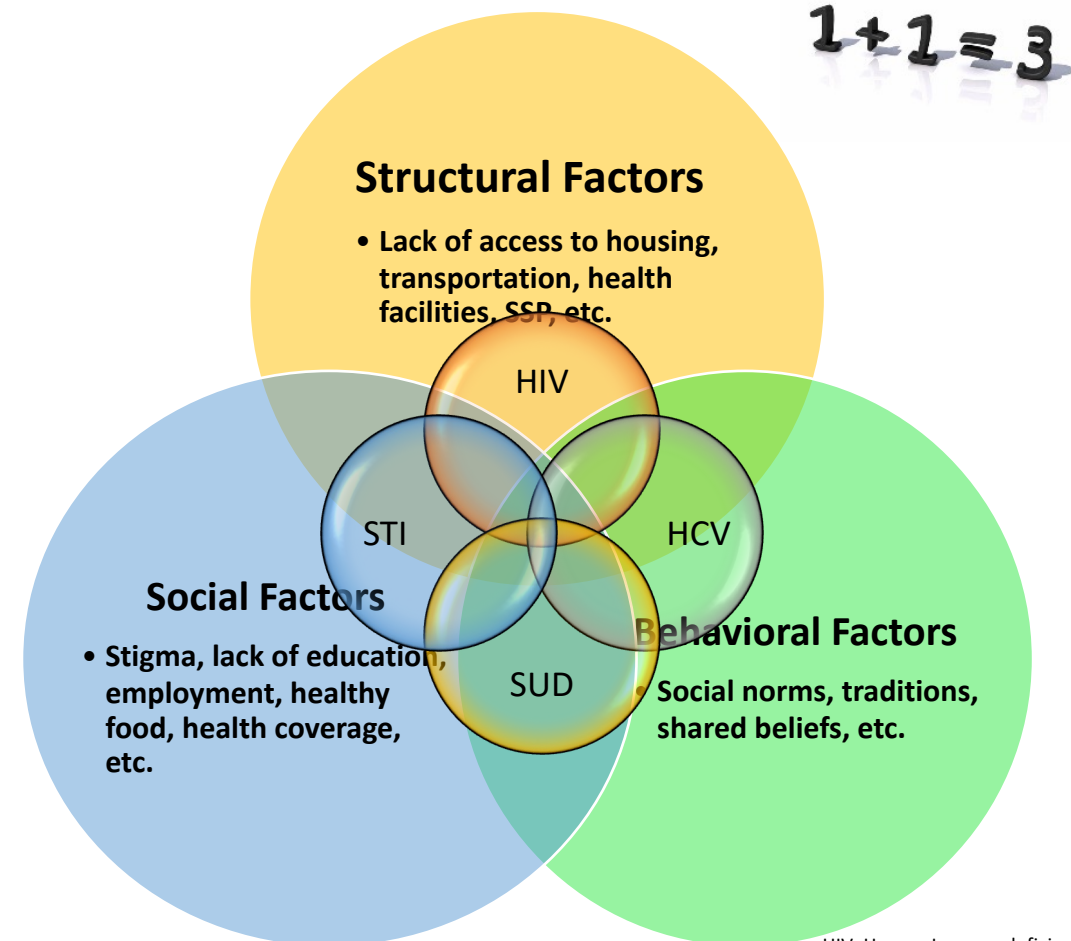
- **Syndemic concepts**
- **Clinical case**
- **The SUD | HCV | HIV | STI syndemic in Indian Country**
- **Interventions to mitigate the syndemic:**
 - **Societal (Macro), health system (micro), health professional (individual)**
- **Conclusions**



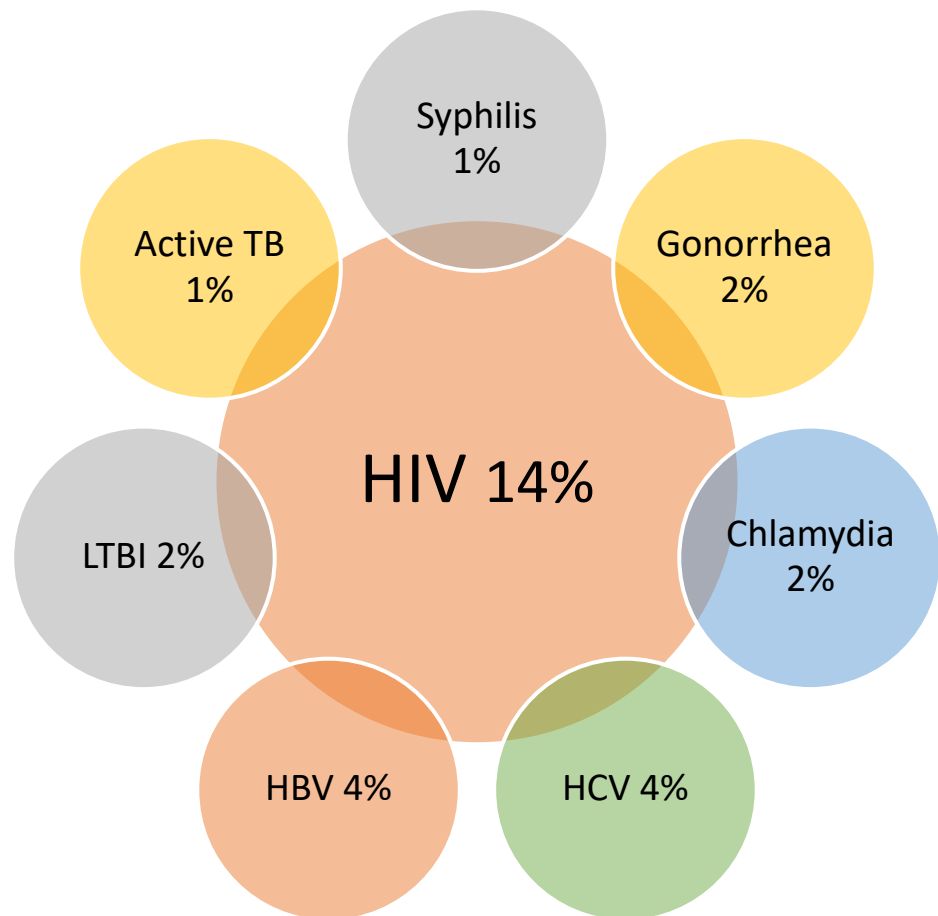
Syndemic

Core principles:

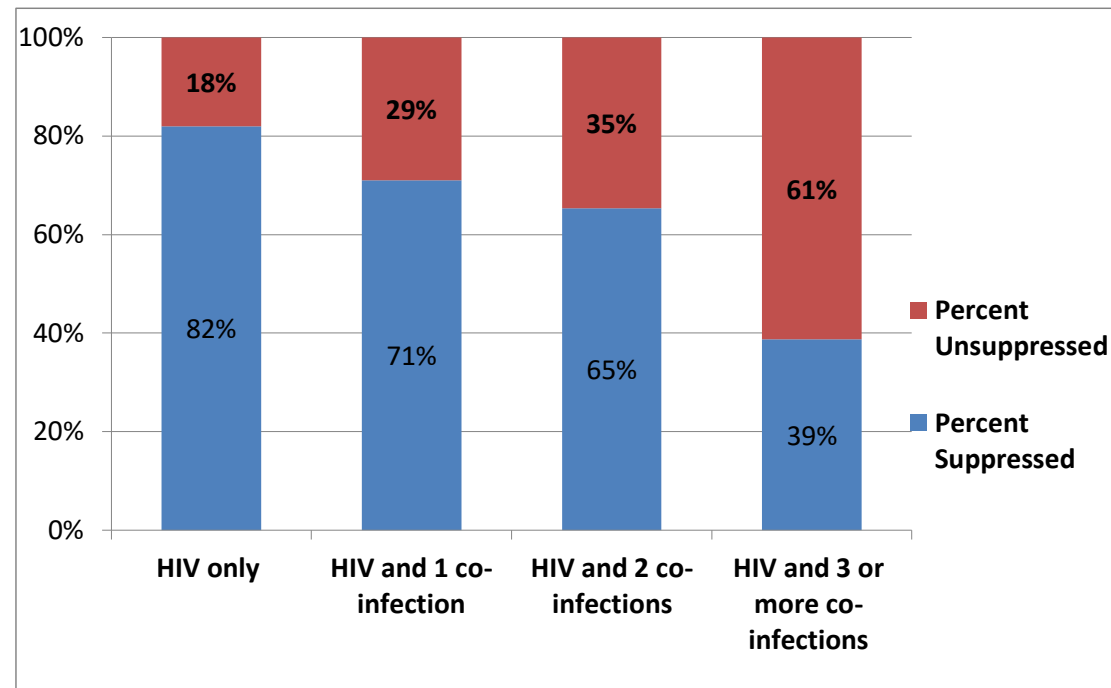
- **Clustering** of two or more conditions in a specific population
- Their **synergism** in producing excess burden of disease in a population
- **Precipitation and propagation** by large scale behavioral, structural and social forces



HIV Syndemic Outcomes



Viral suppression rates by number of co-infections



- Syndemics are associated with poorer HIV health outcomes among PLWHA
- Significant “dose-response relationship” between the number of co-infections and mean VLs
- In addition to numbers of co-infections, particular demographic subgroups, and certain geo-clusters were also associated with poorer health outcomes, underscoring the need to address multiple conditions in tandem in an integrated health system

Indiana HIV/HCV/SUD Outbreak

From 2004-2013

- < 5 HIV infections reported annually in Austin, Indiana

In late 2014

- 3 new HIV diagnoses in Austin IN, 2 of them had shared needles

By mid-January 2015

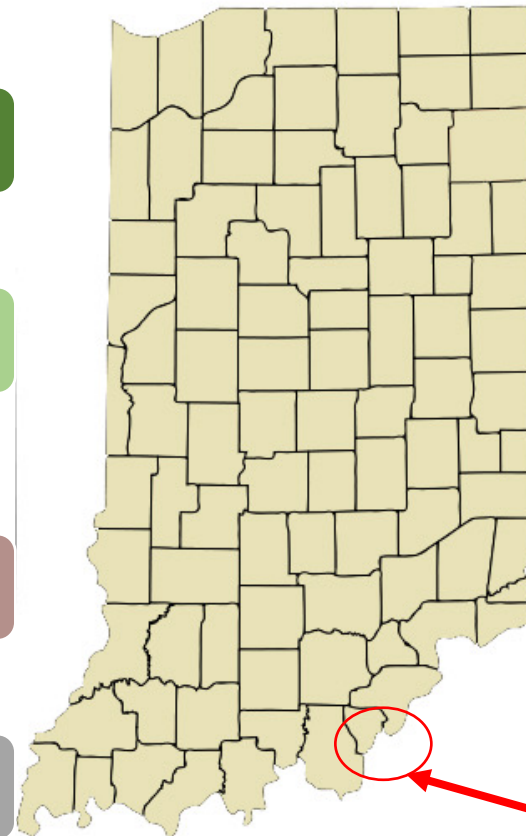
- Through contact tracing ISHD identified 8 more new infections
- The source of infection: Injection of the opioid oxymorphone (semi-synthetic opioid analgesic)

As of June 14, 2015:

- 170 new HIV infections and 115 co-infected with HCV in a Community of 4200 people

All epidemiologically linked to Austin, IN

- Infections were recent and from a single HIV strain



Scott County: Among the state's 92 counties, ranked 92nd in a variety of health and social indicators, including life expectancy

Indiana HIV/HCV Outbreak: Syndemic Risk Factors in Scott County

High poverty (19.0%)

Unemployment (8.9%)

- Few affected persons were employed or insured

Education

- Low educational attainment (21.3% no high school)
- Little HIV awareness in the general population
- Unaware of transmission risks and treatment benefits
- No routine HIV education in schools (abstinence only)

Ranked lowest in the State for health indicators and life expectancy

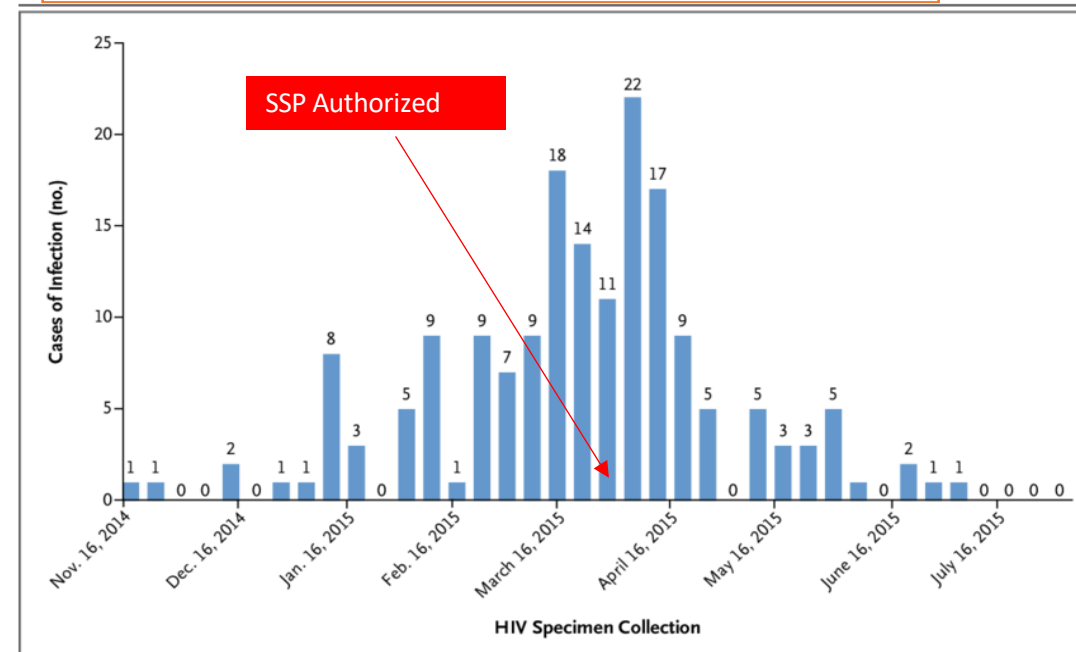
SSP program not permitted by state law

No outpatient HIV/HCV care available

Limited addiction services, including MAT

How Was the Outbreak Controlled?

- **One stop shop**
 - Behavioral health treatment
 - HCV/HIV/MAT treatment provided
- **SSP emergency authorization**





The NEW ENGLAND JOURNAL of MEDICINE

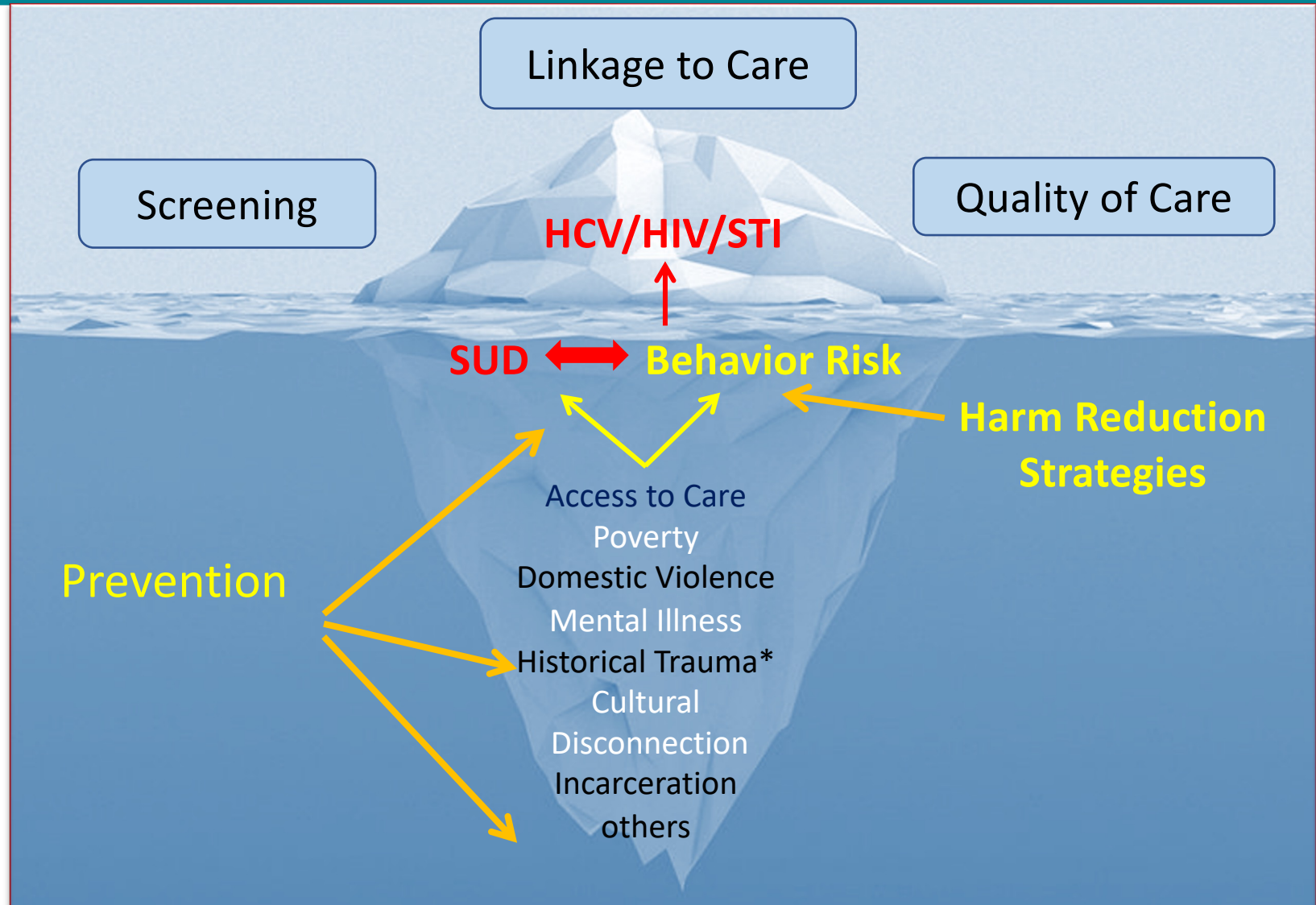
Perspective

Lessons from Scott County — Progress or Paralysis on Harm Reduction?

Sanjay Kishore, B.A., Margaret Hayden, M.Phil., and Josiah Rich, M.D., M.P.H.

“Four years after the United States received a wake-up call about the importance of harm reduction, the most vulnerable areas of the country remain asleep. Despite the federal government’s goal of ending the HIV epidemic in the United States, it’s not clear that it will do what is necessary to address the spread of HIV and HCV in rural America. Health professionals can advocate for legal changes that authorize syringe-exchange programs and other lifesaving interventions.”

Syndemic



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Clinical Case: Mr. S



Mr. S is a 24-year-old AI/AN male who suffered a right femur fracture (MVA) 6 years ago. Unfortunately, **pain management training or policies were not available** in the institution, and he was discharge from the hospital with oxycodone hydrochloride for pain control.

Clinical Case: Mr. S



Two years ago, his new medical provider refused to refill the oxycodone. Unfortunately, **the provider was not trained in screening for SUDs, nor in medication assisted treatment (MAT)**. The patient then turned to his friends who gave him oxycodone, but later he had to purchase it in the streets.

Clinical Case: Mr. S



One year ago, he started injecting heroin since it was cheaper. Unfortunately, **SSPs are not available** where he lives, and he has been sharing needles, syringes and paraphernalia. Unfortunately, he lost his job and health insurance and is now homeless.

Clinical Case: Mr. S



Three days ago, he presented to the ED with opioid withdrawal symptoms (nausea, vomiting, diarrhea, restlessness, abdominal pain).

Clinical Case: Mr. S:

Questions



- **For the Public Health Participants:**
 - Name 2 structural and 2 Social factors that were drivers in Mr. S outcomes
- **For the Clinical Participants**
 - Name 3 interventions that could have prevented this patient from ending up in the ED and 3 interventions you would have done for Mr. S in the ED

Missed Opportunities

Individual Provider

- Orthopedic surgeon did not recognize that opioids are not the first line of treatment for management of pain in the outpatient setting
- The patient's PCP did not recognize that the patient has an SUD

Health System

- Should have had guidelines/policies in place for pain management
- Should have policies in place for Medication Assisted Treatment
- Should have policies in place for screening for SUD, HIV, HCV and STIs

Society

- Should recognize that syringe service programs are evidence-based practices



Clinical Case: Mr. S



Fortunately, the **ED medical provider was trained in SUD management** and induced him with Buprenorphine/Naloxone and gave him a 3-day prescription, enough until he could be evaluated and placed on MAT.

Clinical Case: Mr. S



In addition, **the provider was also trained in screening for STIs, HCV, HIV, and HIV PrEP.** During the ED visit he was screened and tested positive for HCV. HIV and other STIs screens were negative, and he was referred to our clinic for HIV PrEP, HCV treatment and MAT follow-up.

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THE
STATE OF STDs
IN THE
UNITED STATES,
2021

STDs continue to forge ahead, compromising the nation's health.

Note: These data reflect the effect of COVID-19 on STD surveillance trends.



1.6 million
CASES OF CHLAMYDIA
3.8% decrease since 2017



710,151
CASES OF GONORRHEA
28% increase since 2017



176,713
CASES OF SYPHILIS
74% increase since 2017



2,855
CASES OF SYPHILIS
AMONG NEWBORNS
203% increase since 2017

LEARN MORE AT: www.cdc.gov/std/

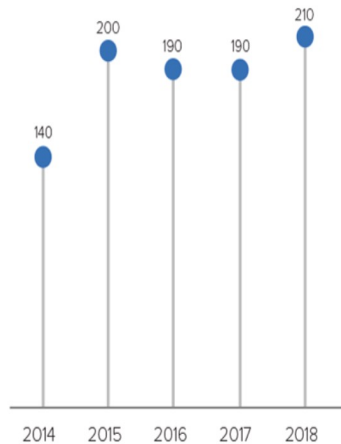
ANYONE WHO HAS SEX COULD GET AN STD, BUT SOME GROUPS ARE MORE AFFECTED

- YOUNG PEOPLE AGED 15-24
- GAY & BISEXUAL MEN
- PREGNANT PEOPLE
- RACIAL & ETHNIC MINORITY GROUPS

HIV in American Indian/Alaska Native Populations

Estimated HIV Infections Among AI/AN People in the US, 2014-2018

HIV infections have increased since 2014.

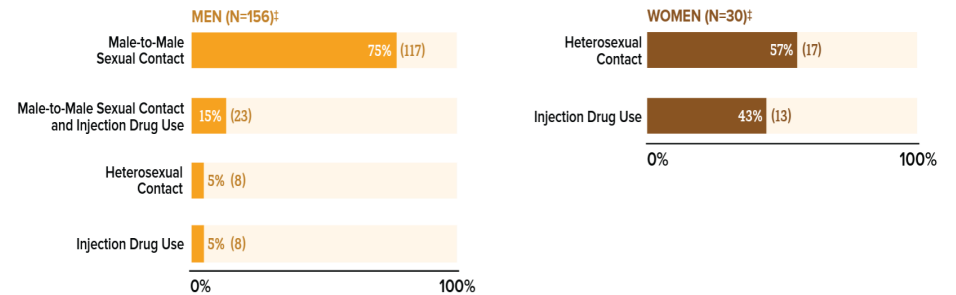


Source: CDC. Estimated HIV incidence and prevalence in the United States, 2014–2018. *HIV Surveillance Supplemental Report 2020,25(1)*.

<1%

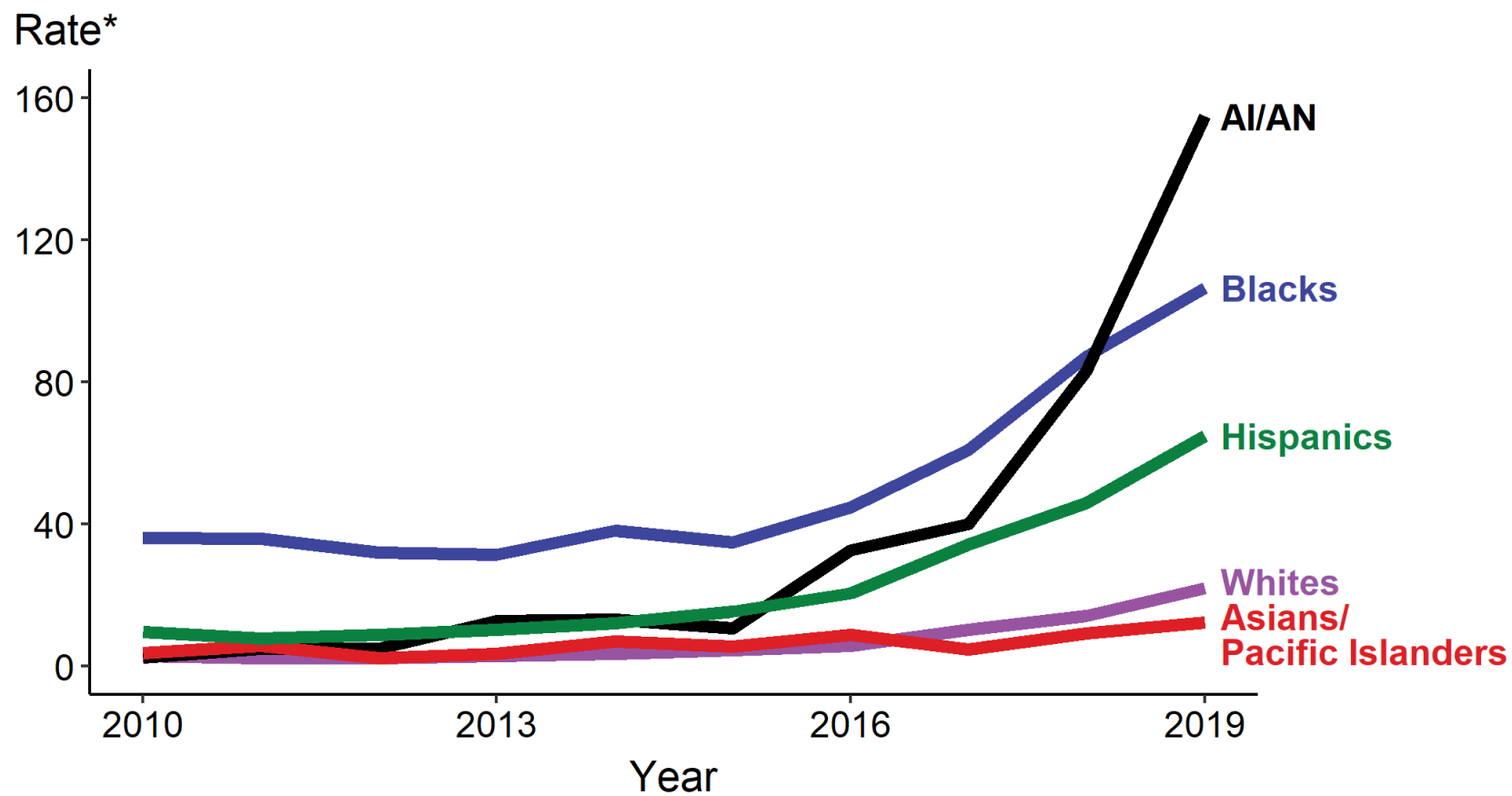
Of the **37,968 NEW HIV DIAGNOSES** in the US and dependent areas* in 2018, less than 1% (186) were among American Indian/Alaska Native (AI/AN) people.

Most new HIV diagnoses were among AI/AN gay and bisexual men.†



- In the U.S. in 2018, both male and female AI/AN had the highest percent of estimated diagnoses of HIV infection attributed to injection drug use, compared with all races/ethnicities.
- Among men, 15% (23) of new HIV diagnoses were attributed to injection drug use, and 11% (21) were attributed to both male-to-male sex and injection drug use.
- Among women, 43% (13) of new HIV diagnoses were attributed to injection drug use.

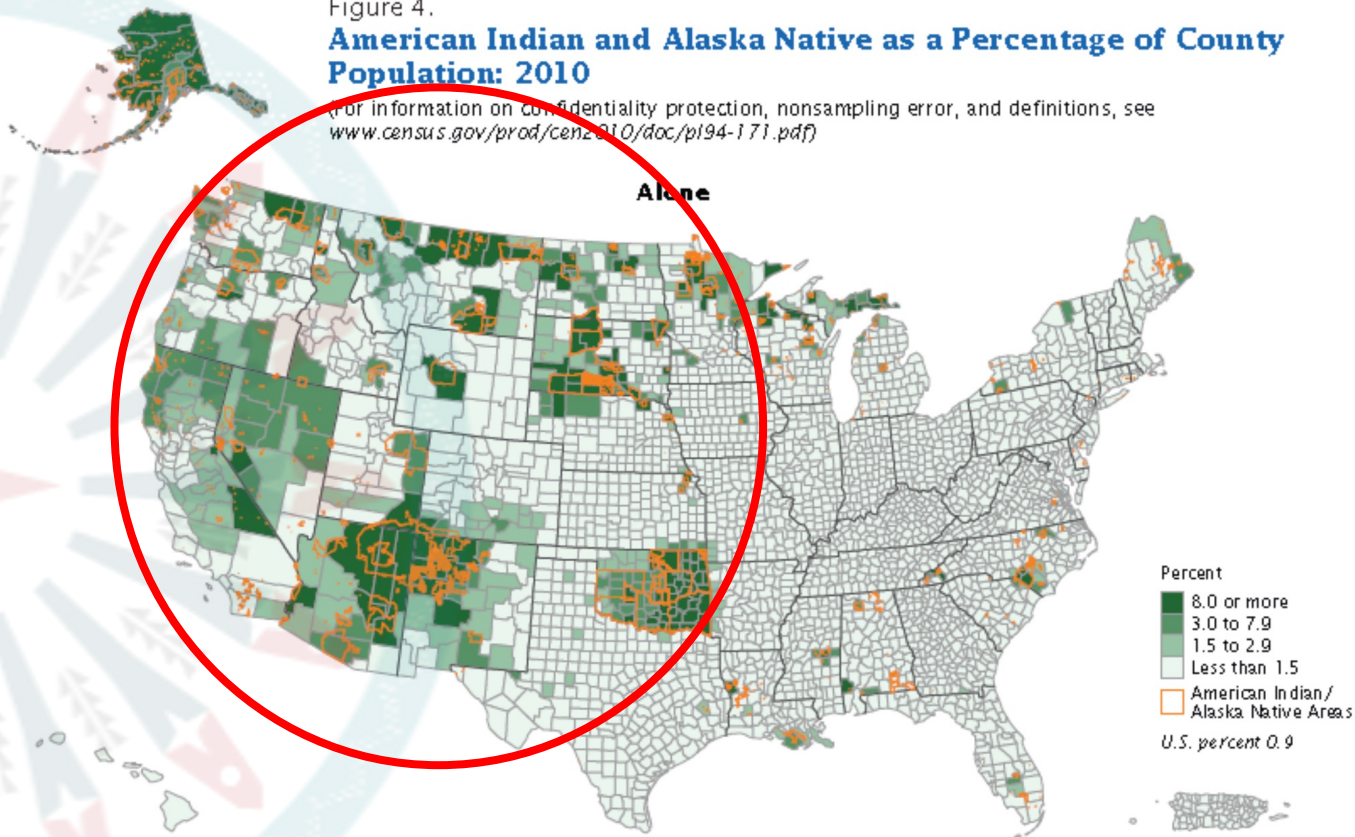
Congenital Syphilis — Rates of Reported Cases by Year of Ethnicity of Mother, United States, 2010–2019



American Indian/Alaska Native (AI/AN) Statistics in the United States

Figure 4.
American Indian and Alaska Native as a Percentage of County Population: 2010

For information on confidentiality protection, nonsampling error, and definitions, see www.census.gov/prod/cen2010/doc/pl94-171.pdf



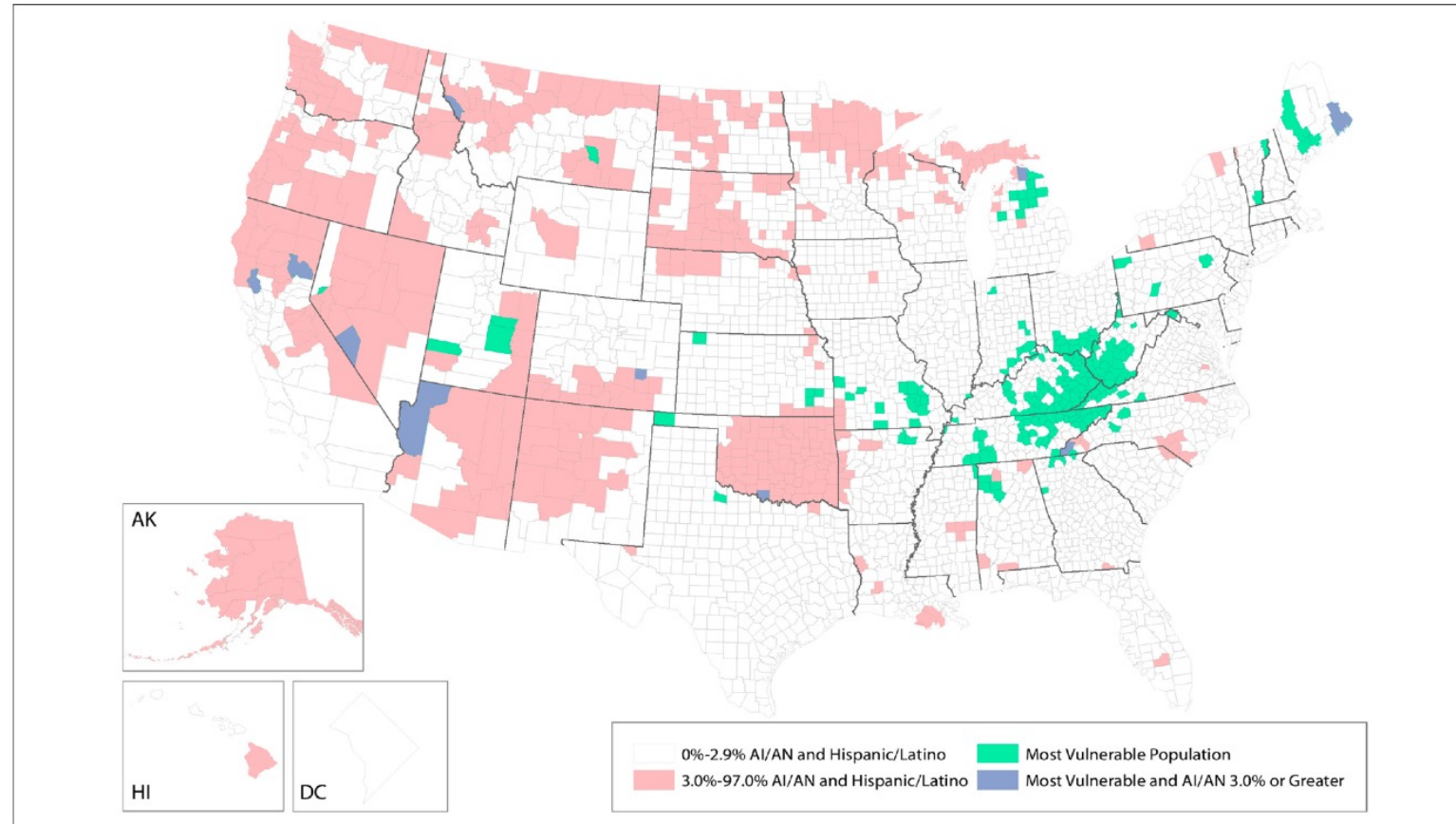
- 573 Federally recognized tribes
 - 5.2 million AI/AN alone or in combination
 - California and Oklahoma have the highest rate of AI/AN population
- **Hepatitis C in AI/AN in the US**
 - HCV disproportionately affects AI/AN^{1,2}
 - The AI/AN HCV **mortality** rate is 10.8 deaths per 100,000, compared to 4.5 per 100,000 nationally.
 - From 2015 to 2016, **incidence** rates of acute HCV among AI/ANs rose from 1.8 to 3.1 cases per 100,000.
 - Rates of **chronic liver disease** and cirrhosis deaths are 2.3 times higher among AI/ANs than Whites.

1. Centers for Disease Control and Prevention. Surveillance for Viral Hepatitis: United States, 2016. Retrieved from <https://www.cdc.gov/hepatitis/statistics/2016surveillance/commentary.htm>

2. Center for Disease Control and Prevention. Deaths: Final Data for 2014. http://www.cdc.gov/nchs/data/nvsr/nvsr65/nvsr65_04.pdf

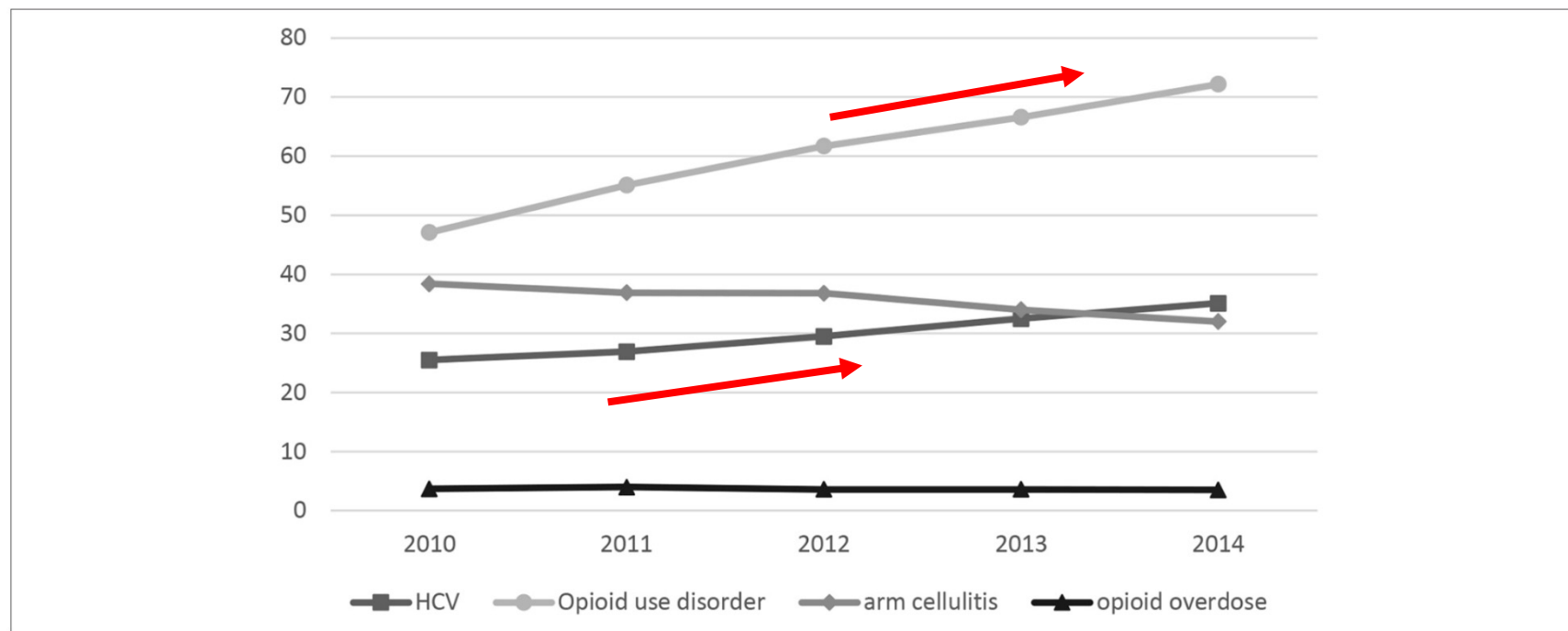
3. US Census Bureau. <https://www.census.gov/www>. Accessed Nov 2, 2019

Trends in Indicators of Injection Drug Use, Indian Health Service, 2010-2014: A Study of Health Care Encounter Data



Representation of American Indian/Alaska Native (AI/AN) and Hispanic/Latino population, as a percentage of county population, by county, in 2010, and 220 counties deemed as most vulnerable to rapid dissemination of HIV or hepatitis C virus infection among persons who inject drugs in the United States, 2012-2013. Data on 220 most vulnerable counties from Van Handel et al.⁹ Data on American Indian/ Alaska Native population from the 2010 US Census

Trends in Indicators of Injection Drug Use, Indian Health Service, 2010-2014: A Study of Health Care Encounter Data



Overall national annual rates (per 10 000 adults) of diagnoses among American Indian/Alaska Native persons for hepatitis C virus (HCV) infection, opioid use disorder, arm cellulitis and abscess, and opioid-related overdose, Indian Health Service, 2010-2014. Rates of diagnoses represent 1 health care encounter per person per year. Data for HCV infections are for adults aged 18-35; all other data are for adults aged ≥ 18 . Arm cellulitis was counted only among adults with no diabetes on or before the health care encounter for arm cellulitis visit (since 2001). Data source: National Patient Information Reporting System.

HIV, HCV, STIs, Drug Use Among AI/AN

- AI/AN had the highest percent of estimated diagnoses of HIV infection attributed to injection drug use
- Syphilis rates rapidly increasing
 - Exacerbates HIV transmission
- Drug use is increasing nationwide and in Indian Country
- AI/AN have greatest rates of new HCV diagnoses
 - Over 2x national rate of HCV-related mortality
 - Rates are decreasing with greater availability of treatment

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What can we do for Mr. S?



**AS A PRIMARY CARE HEALTH WORKER?
(INDIVIDUAL)**



**AS HEALTH SYSTEM LEADERSHIP?
(MICRO)**



**AS A SOCIETY
(MACRO)**



Actions to Address the Syndemics Among People Who Inject Drugs as a Primary Care Health Care Worker



- Screening patients for SUDs and mental health disorders
- Testing patients and their sexual or drug-injection partners for HIV, HCV, and STIs
 - With appropriate pre and post-test counseling
- Offering immediate treatment according to established guidelines for patients who test positive

Actions to Address the Syndemics Among People Who Inject Drugs as a Primary Care Health Care Worker



- Providing Hep B vaccinations
 - Even one dose can be effective!
- Providing naloxone to opioid users and their families/partners
- Obtaining training to provide opioid agonist therapy
 - Immediate referrals to substance use treatment programs that provide opioid-agonist therapy

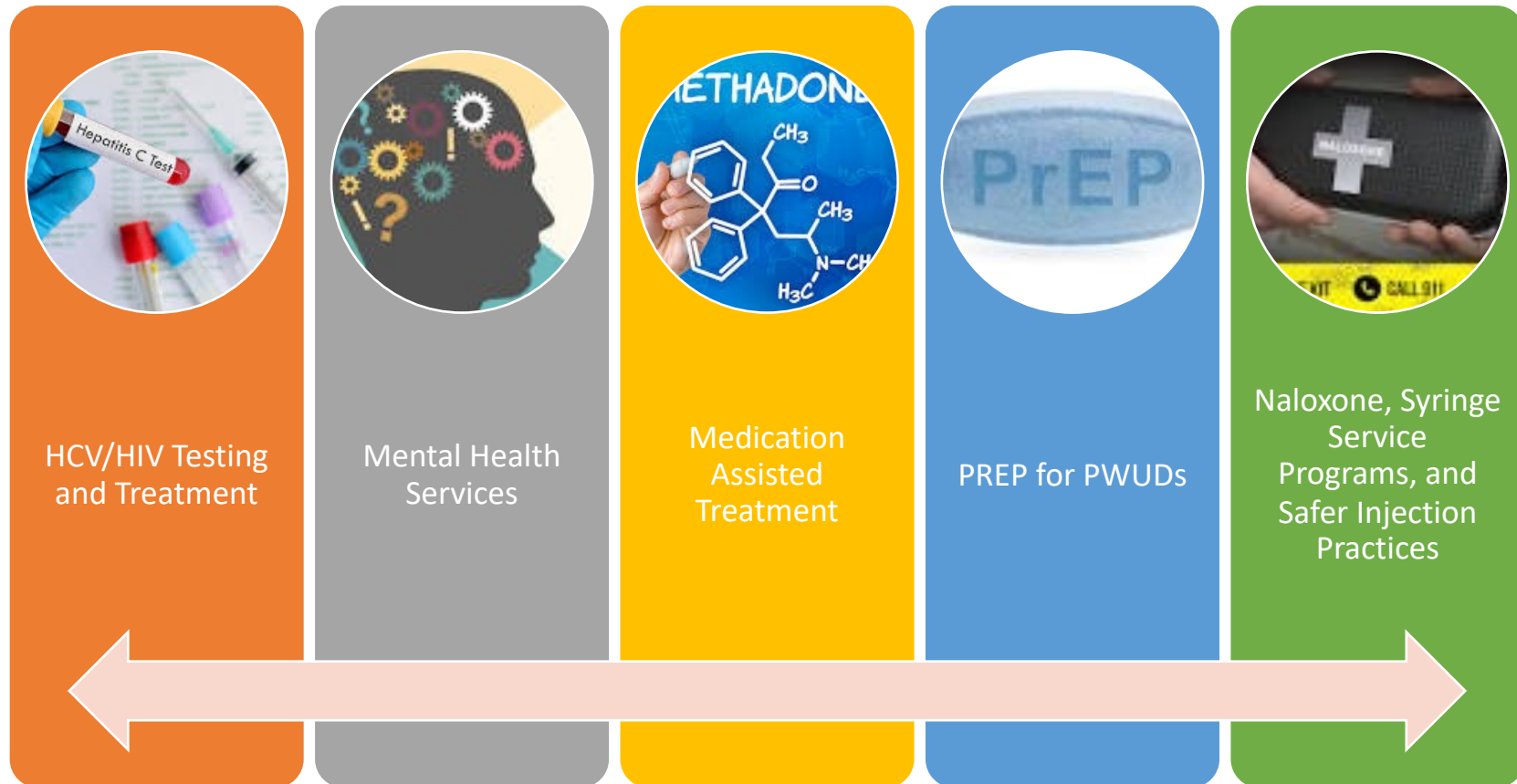
Actions to Address the Syndemics Among People Who Inject Drugs as a Primary Care Health Care Worker



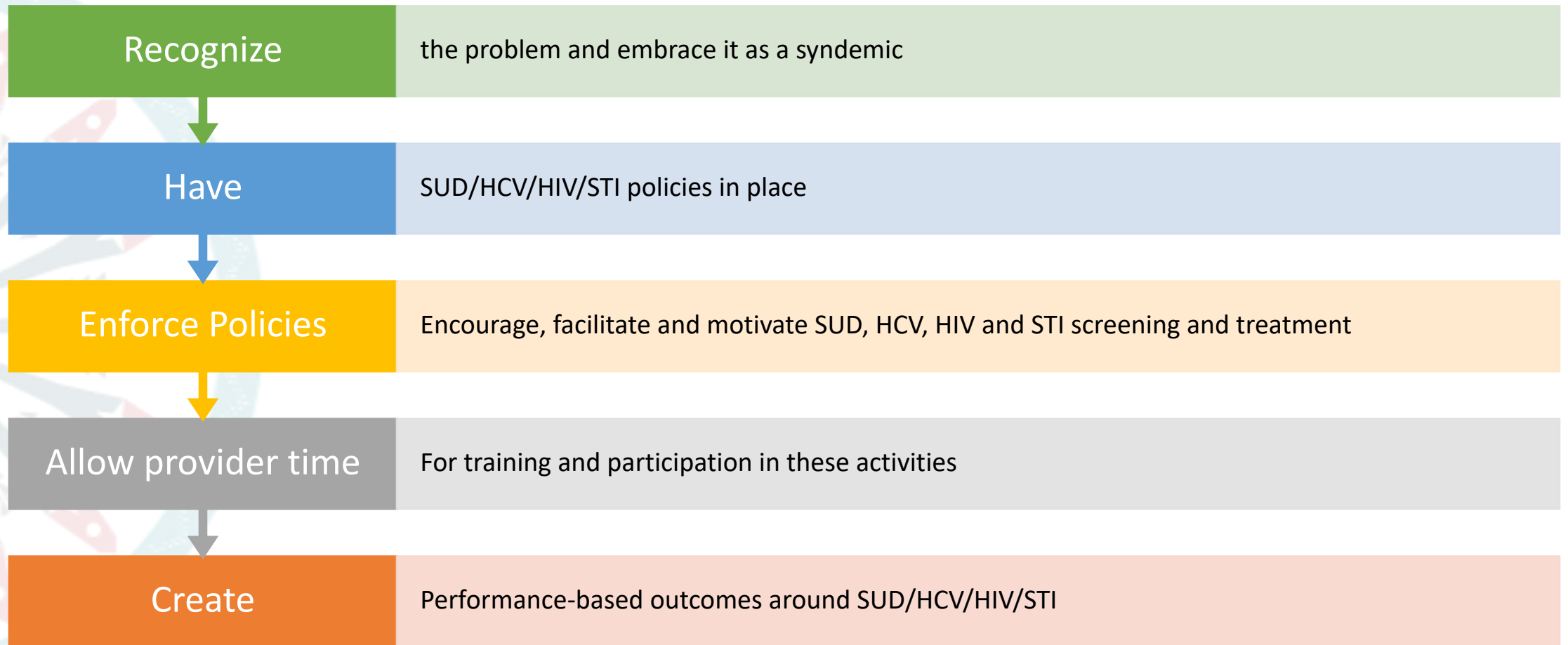
- Supporting injection-drug users by providing sterile syringes or referring them to syringe service programs
- Supporting legislative reforms to expand Medicaid and allow federal funds to support SSPs
- Using PDMPs in clinical decision making involving opiate prescribing

SSPs: Syringe Service Program, PDMPs: Prescription Drug Monitoring Programs

What can the Healthcare Worker do for Mr. S?



What can the Health Care system (Leadership) do for Mr. S (Micro level)



What Can Society Do For Mr. S (Macro level)?

- **Decrease Injection Drug Use and/or make it safer**
 - Make SSP available
 - Easy access to MAT
 - Easy access to behavioral health
- **Eliminate social and structural determinants associated with injection drug use**
 - Poverty (Decrease the economic inequality gap)
 - Housing
 - Lack of education
 - Racism
 - Stigma
 - Mass incarceration (Reform drug laws)

Addressing the root of the problem is critical for the elimination of present SUD/HCV/HIV/STI syndemic and the prevention of future ones

A coordinated approach between society, government, public health will be needed

Syringe Services Programs

SSPs adapt to local needs by providing comprehensive support services, such as ways to get treatment, medicines to prevent overdoses, and tools to prevent HIV and viral hepatitis. Many support services may be operated in partnership with federal government funding¹

Combined use of OST and high coverage of NSP was associated with a 74% risk reduction in HCV acquisition²

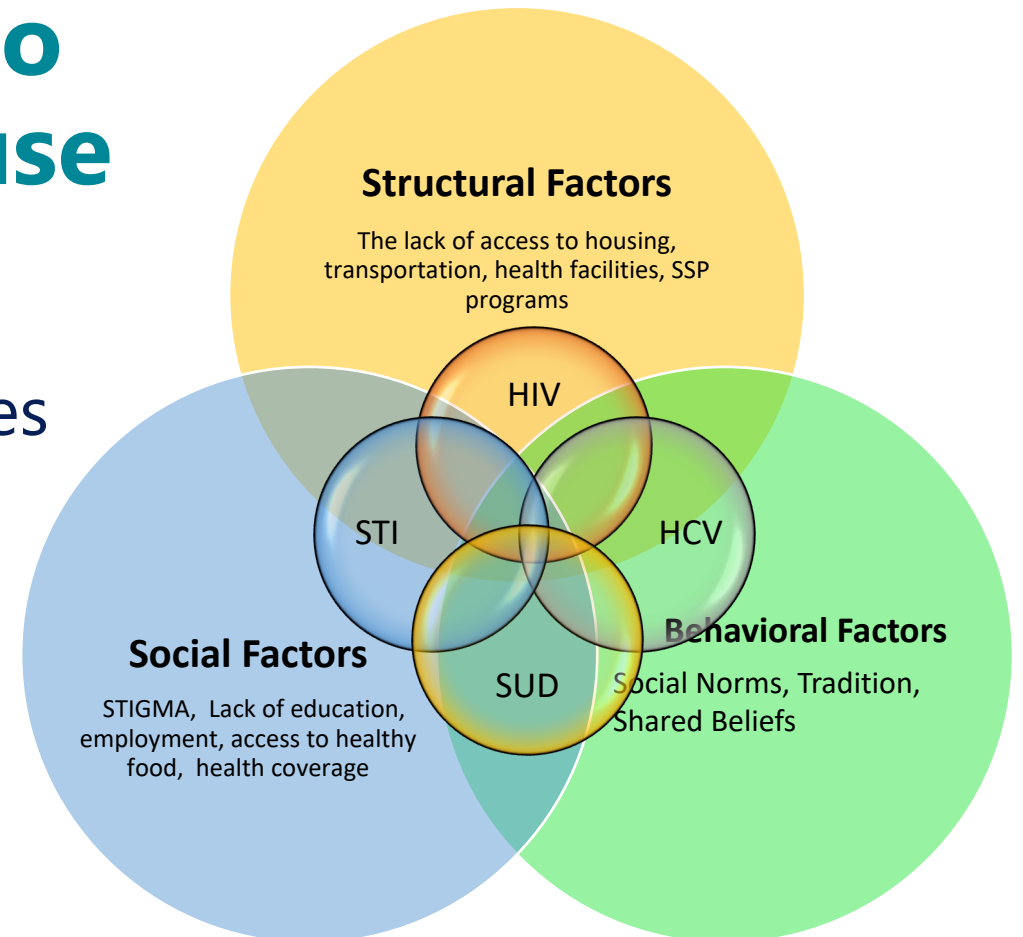


1. HIV.gov: Syringe Service Programs. <https://www.hiv.gov/federal-response/policies-issues/syringe-services-programs>

Recognize and Understand

When people are unable to seek or receive care because of socioeconomic barriers

- Treatable diseases persist at higher rates
- With a higher baseline rate of transmissible infections, it is more likely for the community to be exposed



No one is safe until everybody is safe

Conclusions

Ending the syndemic will require a multipronged approach

- SUD services should be integrated into primary care – **barriers for harm reduction should be removed**
- The efficacy of PrEP and HIV treatment has been established – **access for the most vulnerable is critical**
- Syphilis is taking a toll in AI/AN communities – **zero tolerance for congenital syphilis should be the standard**

References

- Singer, M. and Clair, S. (2003), Syndemics and Public Health: Reconceptualizing Disease in Bio-Social Context. *Medical Anthropology Quarterly*, 17: 423-441. <https://doi.org/10.1525/maq.2003.17.4.423>
- Chu PL, Santos GM, Vu A et al. *Journal of the International AIDS Society* 2012. 15:102-103
- Community Outbreak of HIV Infection Linked to Injection Drug Use of Oxymorphone — Indiana, 2015 *MMWR* May 1, 2015 / 64(16):443-444
- US Census Bureau. <https://www.census.gov/www>. Accessed March 22, 2021
- Evans ME, Person M, Reilley B, et al. Trends in Indicators of Injection Drug Use, Indian Health Service, 2010-2014 : A Study of Health Care Encounter Data. *Public Health Rep.* 2020 Jul/Aug;135(4):461-471. doi: 10.1177/0033354920937284. Epub 2020 Jul 7. PMID: 32633599; PMCID: PMC7383762.
- Viral Hepatitis Surveillance Report 2018 — Hepatitis C <https://www.cdc.gov/hepatitis/statistics/2018surveillance/HepC.htm>
- Melkonian SC, Jim MA, Haverkamp D, et al. Disparities in Cancer Incidence and Trends among American Indians and Alaska Natives in the United States, 2010-2015. *Cancer Epidemiol Biomarkers Prev.* 2019;28(10):1604-1611. doi:10.1158/1055-9965.EPI-19-0288
- National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention Division of HIV/AIDS Prevention. <https://www.cdc.gov/hiv/group/raciaethnic/aian/index.html>

References

- Sordo L, Barrio G, Bravo M J, Indave B I, Degenhardt L, Wiessing L et al. Mortality risk during and after opioid substitution treatment: systematic review and meta-analysis of cohort studies *BMJ* 2017; 357 :j1550 doi:10.1136/bmj.j1550
- Haffajee RL, Lin LA, Bohnert ASB, Goldstick JE. Characteristics of US Counties With High Opioid Overdose Mortality and Low Capacity to Deliver Medications for Opioid Use Disorder. *JAMA Netw Open*. 2019;2(6):e196373. doi:10.1001/jamanetworkopen.2019.6373
- Reilley B, Haberling DL, Person M, Leston J, Iralu J, Haverkate R, Siddiqi AE. Assessing New Diagnoses of HIV Among American Indian/Alaska Natives Served by the Indian Health Service, 2005-2014. *Public Health Rep*. 2018 Mar/Apr;133(2):163-168. doi: 10.1177/0033354917753118. Epub 2018 Mar 8. PMID: 29517957; PMCID: PMC5871137.
- Lauren Canary, Susan Hariri, Cecily Campbell, et al., Geographic Disparities in Access to Syringe Services Programs Among Young Persons With Hepatitis C Virus Infection in the United States, *Clinical Infectious Diseases*, Volume 65, Issue 3, 1 August 2017, Pages 514–517
- Paquette CE, Pollini RA. Injection drug use, HIV/HCV, and related services in nonurban areas of the United States: A systematic review. *Drug Alcohol Depend*. 2018 Jul 1;188:239-250. doi: 10.1016/j.drugalcdep.2018.03.049. Epub 2018 May 8. PMID: 29787966; PMCID: PMC5999584.
- Jon E. Zibbell, Alice K. Asher, Rajiv C. Patel, et al. Increases in Acute Hepatitis C Virus Infection Related to a Growing Opioid Epidemic and Associated Injection Drug Use, United States, 2004 to 2014. *J Public Health*. 2018 Feb; 108(2): 175–181.

Questions?

Thank You

