

Syphilis Elimination Task Force

Irina Tabidze, MD, MPH
May 2, 2023



- No financial interest to disclose.
- This continuing education activity is managed by The St. Louis STI/HIV Prevention Training Center and accredited by Missouri State Medical Association (MSMA) in cooperation with the Chicago Department of Public Health.



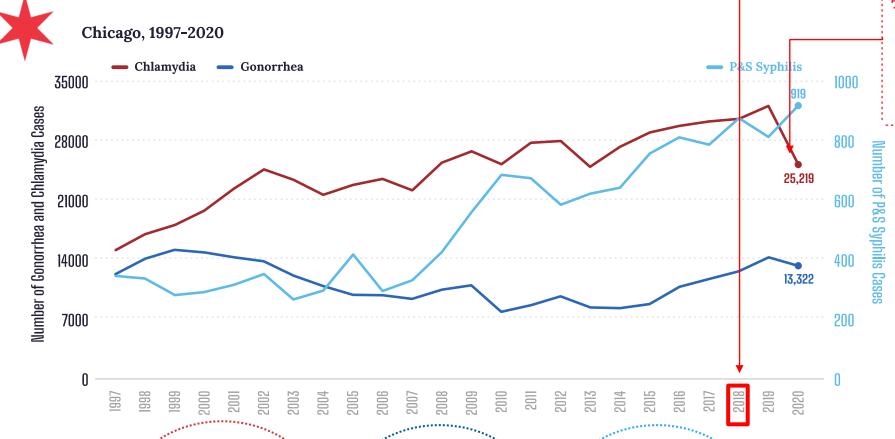
Decreases in the number of reported Chlamydia cases in 2020 are unlikely due to a reduction in a new infections. During the COVID-19 pandemic, many health care institutions, including CDPH STI Specialty Clinics, limited in-person visits to patients with symptoms or closed entirely.

2021 BY THE NUMBERS

27,404 Chlamydia cases

13,401 Gonorrhea cases

794 Primary and Secondary (P&S) Syphilis cases



as many chlamydia cases in women than men

as many gonorrhea cases in men than women

as many P&S Syphilis cases in men than women

Source: Chicago Department of Public Health. HIV+STI Data Report, 2020. Chicago, IL: City of Chicago; September 2022.





August 22, 2019

Task Force to Combat Sexually Transmitted Infections

- In August 2019, Mayor Lori Lightfoot and Chicago Department of Public health launched a multiyear initiative to combat Sexually Transmitted Infections
- Task force co-led by CDPH & medical and community organizations
- An initial goal was to develop a strategic plan for reducing new syphilis cases in Chicago

"The City of Chicago is committed to ensuring all residents have the opportunity to be healthy," said Mayor Lightfoot. "There is an urgent need to scale up prevention and treatment efforts on STIs. Together with community partners, we intend to meet this challenge."

Syphilis Elimination Task Force – Keynote Speakers





Allison Arwady, MD Commissioner, CDPH



Gail Bolan, MD
Division of STD Prevention,
CDC



September 10, 2019

Dear Task Force Members.

On behalf of the Mayor Lightfoot and Chicago Department of Public Health (CDPH) Bureau HIV/STI, you are cordially invited to attend the inaugural meeting of the Chicago Task Force to Reduce Sexually Transmitted Infections (STIs).

We recognize the leadership and expertise that you can bring to tackling the significant challenge of reversing the trends of STI cases in Chicago that have continued to increase at a rapid pace over the past decade. While these trends mirror trends across the US, we feel the time is right for Chicago to turn the tide on STIs given synergies with the "Getting to Zero" HIV Initiative.

We need your wisdom and bold ideas to begin to begin to illuminate a path for bringing sexual health and STI prevention strategies into the brightest possible light so that all Chicagoans can achieve optimal health.

Recognizing your already busy schedules, we would like to use your time wisely and keep meetings to a maximum 2 hours over the next few months. The first meeting will take place on October 25th, 2019 at 5:00 pm. The meeting will be held in the Board Room of the Chicago Department of Public Health's Administrative office located at 333 South State Street, second floor, Chicago, IL 60604.

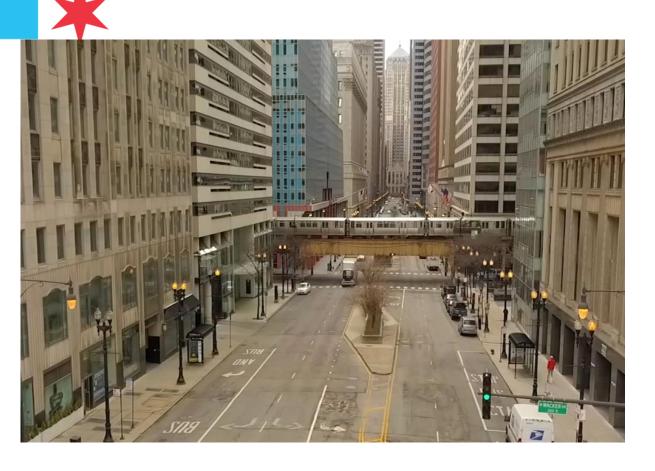
We hope you will be able to join us with this important work. Please RSVP by Oct 10, 2019 for this meeting by emailing Denise Stewart, Administrative Assistant at: denise.stewart@cityofchicago.org. If you have any questions about the STI Task Force, please feel free to contact us.

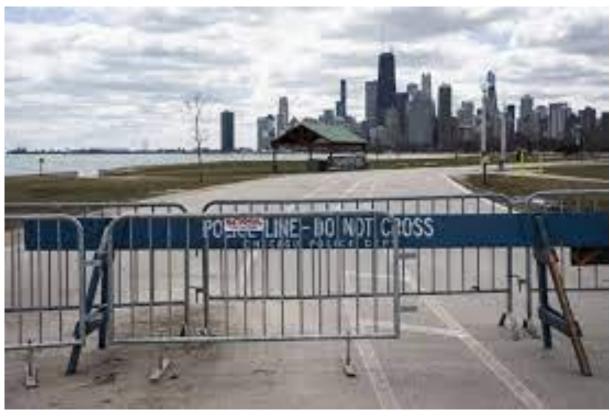
We appreciate your involvement as we work to improve STI services throughout Chicago.

Sincerely,

David Kern Deputy Commissioner

The COVID-19 pandemic...







Recommendations Development Timeline

October 2019

Kick off Meeting **March 2021**

Recommendati ons Development **May 2023**

Release of Recommendati ons













Dec 2019 - Oct 2020

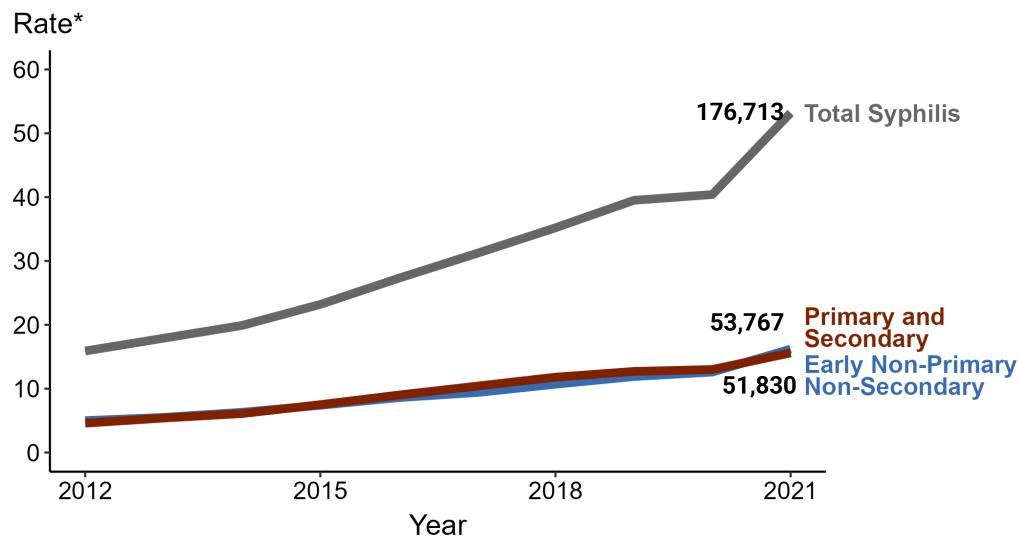
STF Meetings

April 2021

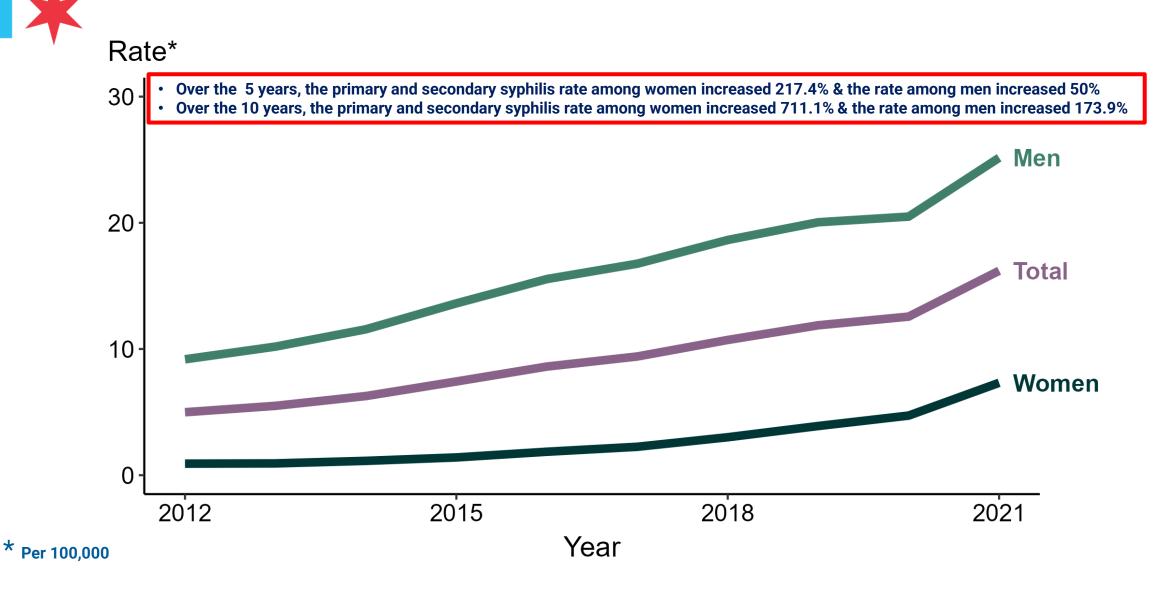
Recommendat ions Prioritization June -July 2023

Publication of STF Recommendations

Syphilis — Rates of Reported Cases by Stage of Infection, United States, 2012–2021

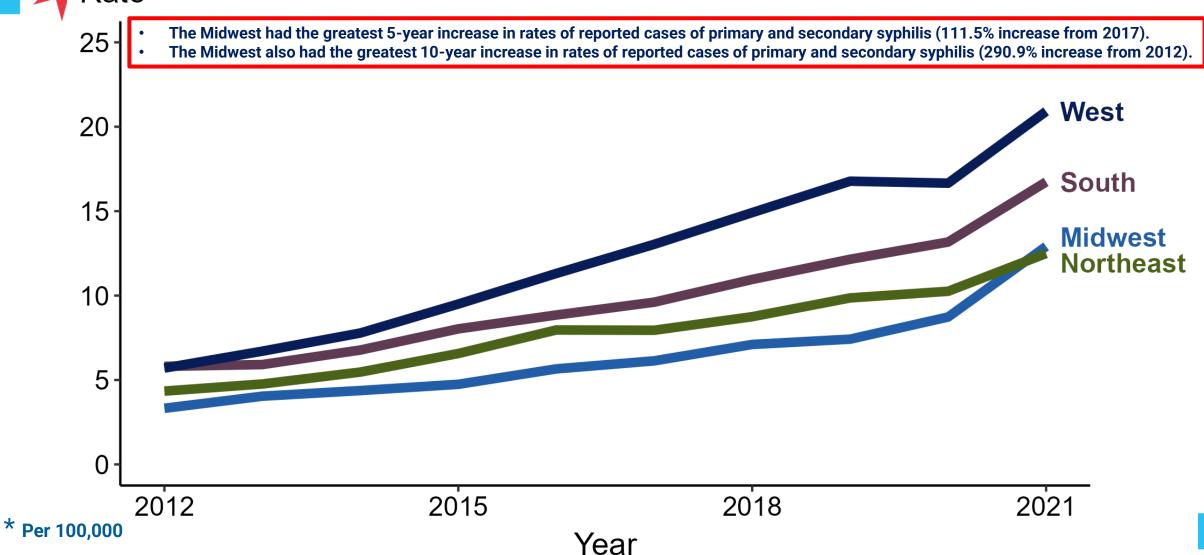


Primary and Secondary Syphilis — Rates of Reported Cases by Sex, United States, 2012–2021

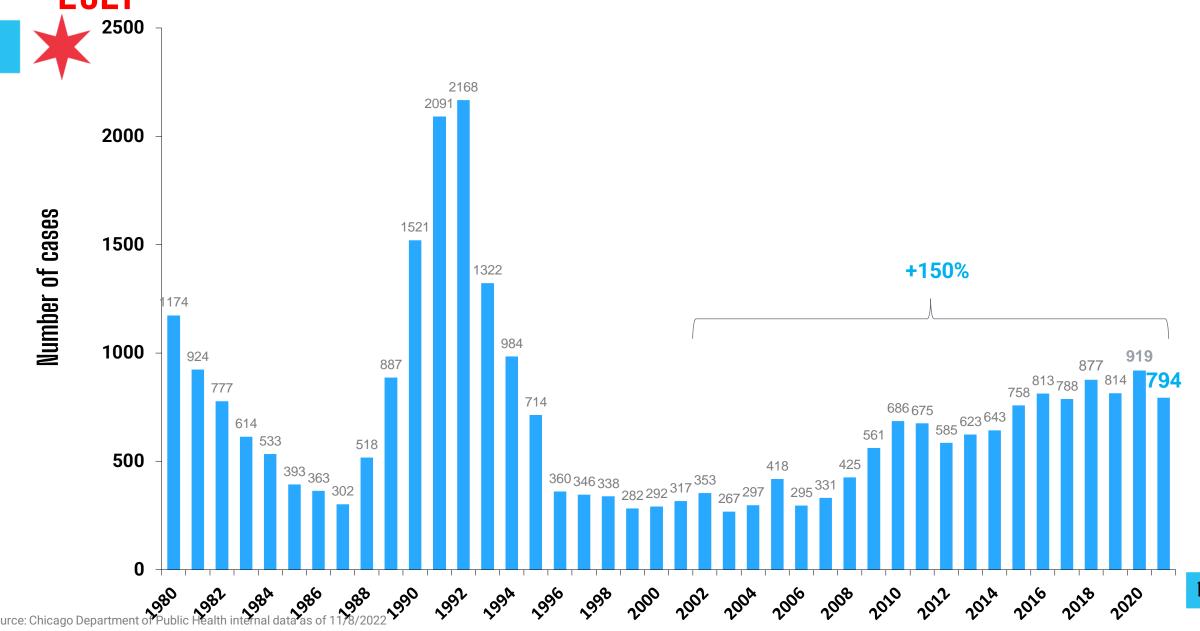


Primary and Secondary Syphilis — Rates of Reported Cases by Region, United States, 2012–2021



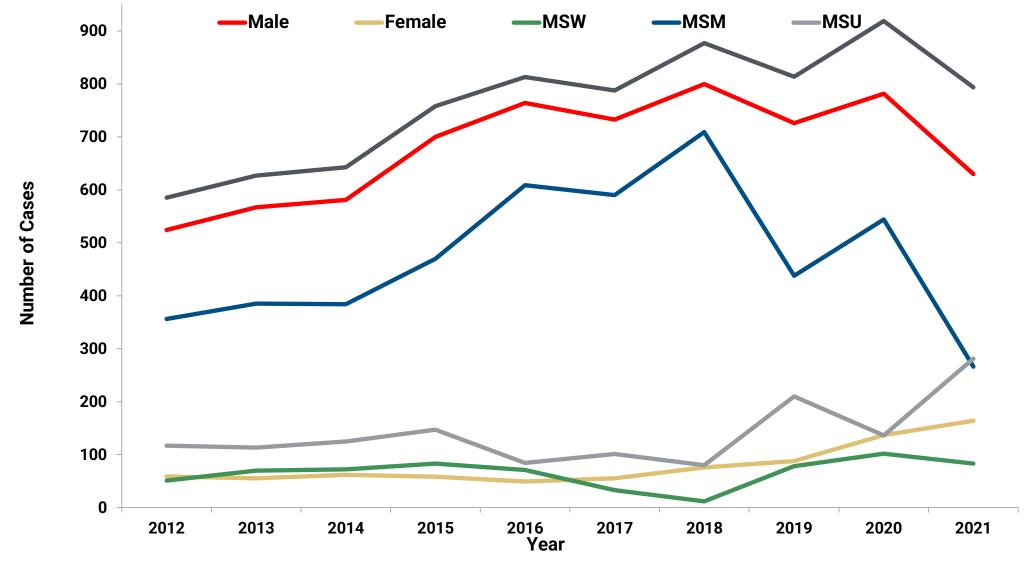


Primary & Secondary (P&S) Syphilis Cases by Year of Report, 1980-2021



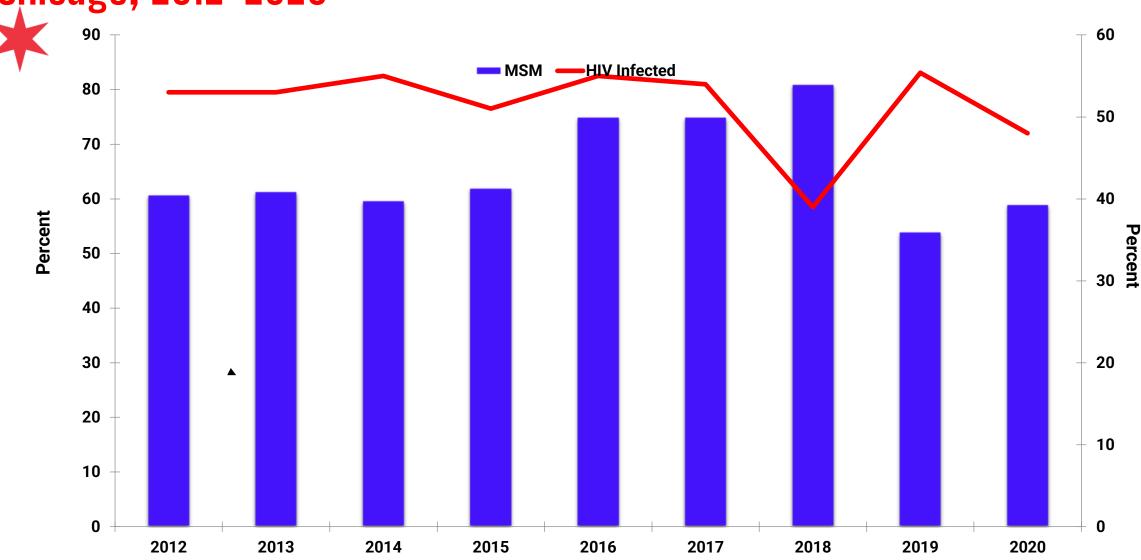
P&S Syphilis – Reported Cases by Sex and Sex of Sex Partners, 2012-2021



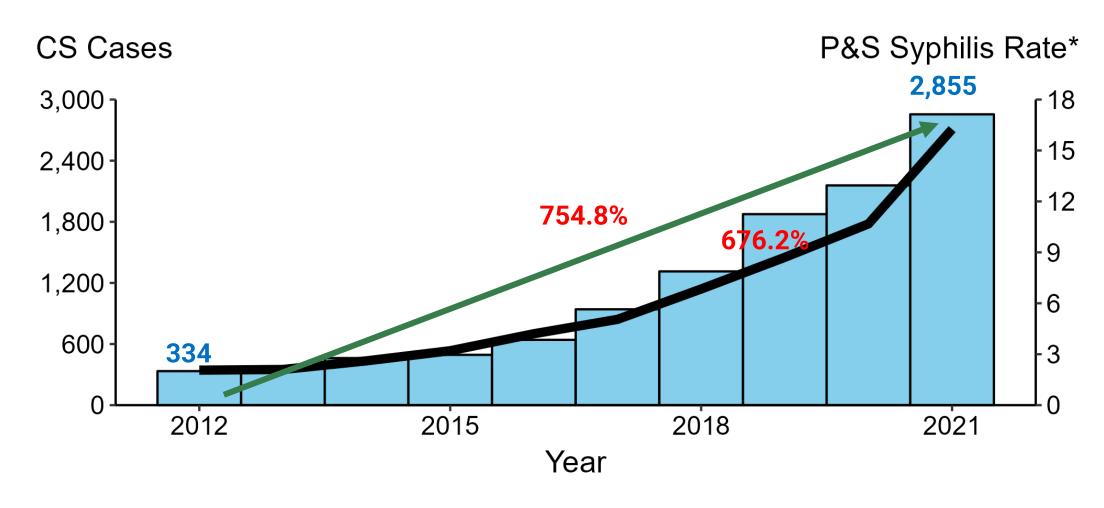




Percent of P&S syphilis among MSM who were HIV-infected, Chicago, 2012-2020



Congenital Syphilis — Reported Cases by Year of Birth and Rates of Reported Cases of Primary and Secondary Syphilis Among Women Aged 15–44 Years, United States, 2012–2021



* Per 100,000

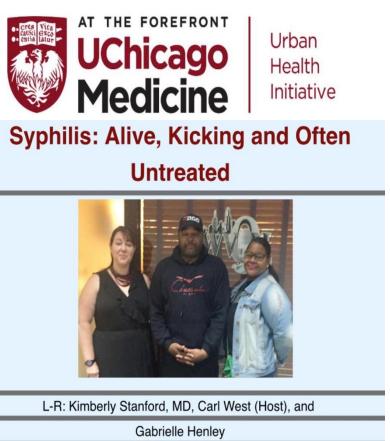
CS cases

Female (15–44 years) P&S syphilis rate*

ACRONYMS: CS = Congenital syphilis, P&S syphilis = Primary and secondary syphilis

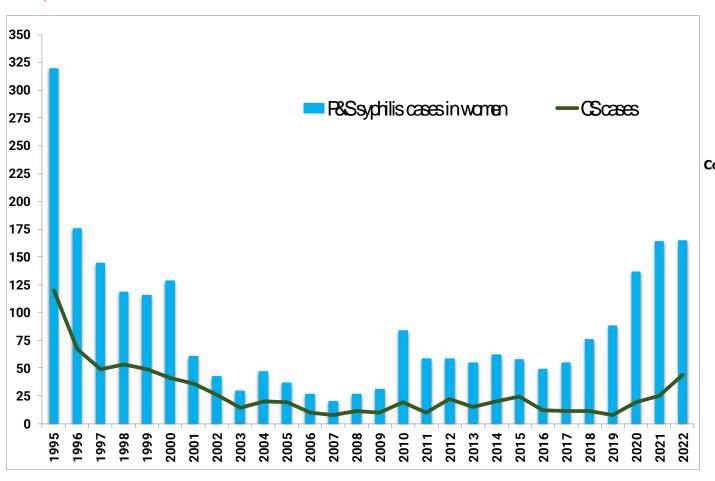
Congenital Syphilis Elimination Team

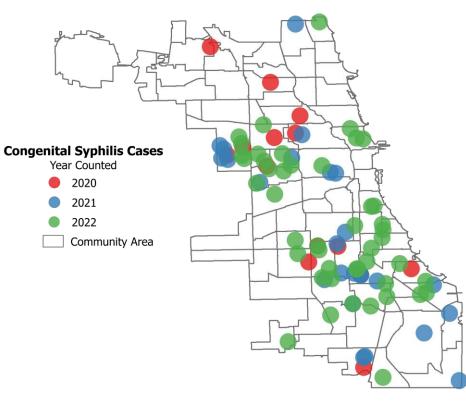




Elimination of CS is now feasible due to the limited number of cases with a highly focal distribution

Reported Cases of Congenital Syphilis (CS) and P&S Syphilis Among Women of Reproductive Age, Chicago, 1995–2022*





Congenital Syphilis cases, Chicago, 2020-2022*



- 9 CS cases reported in 2019
- 19 CS cases reported in 2020
- 25 CS cases reported in 2021
- 46 CS cases reported in 2022







In 2022* mothers aged 20-29 accounted for **54.3%** of the congenital syphilis cases in the city of Chicago. The median maternal age for congenital syphilis cases in 2022 was 26 years old

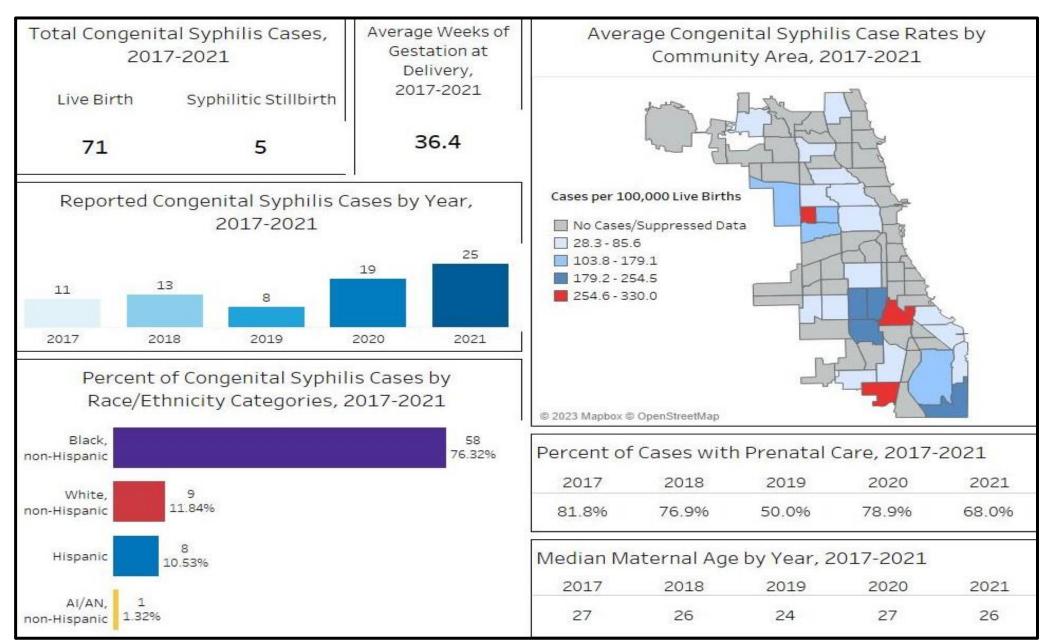


From 2016-2022*, the number of reported CS cases increased by 283% (from 12 to 46 cases).

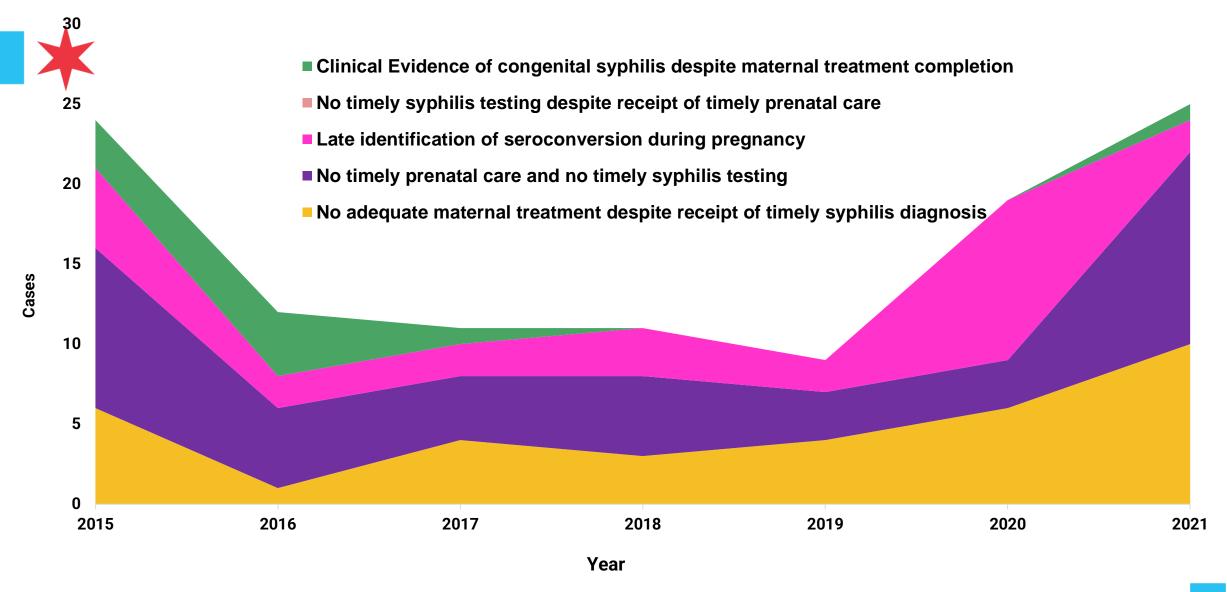
^{* 2022} Data are still provisional

STI Dashboard Snapshot, Congenital Syphilis 2016-2021





Missed Opportunities for CS prevention during pregnancy



What Do Healthcare Providers Need to Know?



Syphilis Screening Recommendations:

Prenatal

1st prenatal visit: All pregnant women

Early 3rd trimester (~28 weeks) and at delivery

Some states require all women to be screened at 3rd trimester and/or at delivery

Neonates: should *NOT BE* discharged from the hospital unless the syphilis serologic status of the mother has been determined at least one time during pregnancy and preferably again at delivery if at risk

Stillborn: Any woman who delivers a stillborn infant should be tested for syphilis



What Do Healthcare Providers Need to Know, cont..?



- Benzathine penicillin is the only acceptable treatment for a pregnant woman with syphilis
- Timely and adequate treatment for the stage of disease is critical to prevent transmission of syphilis from mother to her unborn baby
- Don't delay in treating a pregnant woman for syphilis
- Work closely with the Chicago Department of Public Health.
- Trained Disease Intervention Specialists (DIS) can help with locating hard-toreach women
- Health Department may have historical syphilis information, including old titers and treatment information.







Know the Facts: Your Baby Will Thank You!

You can get syphilis or other STDs more than once. If you would like more information, talk to your health care provider, call or visit one of the Chicago Department of Public Health's STD/HIV clinics.

641 W. 63rd St., Lower Level 2861 N. Clark, 2nd Floor M, W, F 8am-4pm, T, Th 9am-5pm M, W, F 8am-4pm, T, Th 10am-6pm

Phone: 312.746.4871 312.746.4872 Phone: 312.747.2831 312.747.0054 M, W 8am-4pm, T, Th 10am-6pm M 8am-4pm, Th 9am-5pm

West Town STI Specialty Clinic Phone: 312.744.5464 312.742.4092

Pregnant?

Get Prenatal Care and Protect Your Baby from

Congenital Syphilis

Call 311 or visit www.cityofchicago.org/health

Phone: 312.747.8900 312.747.8901 Phone: 312.744.5507 312.744.1628









Conozca los hechos: Su bebé se lo agradecerá!

Usted puede contraer sífilis u otras enfermedades de transmisión sexual más de una vez.

Si desea más información , hable con su doctor o proveedor de cuidado de la salud, o llame o visite una de las clínicas de enfermedades sexuales del Departamento de Salud Pública.

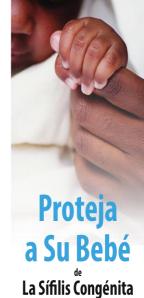
641 W. 63rd St., Lower Level 2861 N. Clark, 2nd Floor Telefona: 312.747.8900 312.747.8901

Englewood STI Specialty Clinic Lakeview STI Specialty Clini Telefono: 312.744.5507 312.744.1628

West Town STI Specialty Clinic 2418 W. Division Telefona: 312.744.5464 312.742.4092

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> HEALTHY CHICAGO Chicago, Illinois 60604 www.cityofchicago.org/health





Syphilis Elimination Task Force Members













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Task Force Recommendations for Syphilis Elimination

Andrew Trotter, MD, MPH

Disclosure

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X Task Force Recommendation Goals

- Goal 1: Preventing New Syphilis Infections and Reducing Complications of Syphilis Infections
- Goal 2: Support Syndemic Research and Expand Collaboration with the CDC to Develop Syphilis Self-tests or At-Home Syphilis Tests
- Goal 3: Reduce Syphilis Related Health Disparities and Inequities
- Goal 4: Promote More Integrated and Coordinated Efforts to Address the Syphilis Syndemics in Chicago

Goal 1: Preventing New Syphilis Infections and Reducing Complications of Syphilis Infections



Strengthen Partner Notification Services

 Investment in training of existing staff and new staff to enhance capacity

Improve medical provider and health system awareness and knowledge

- Local STI conferences
- Institutional grand rounds
- Health professions schools
- Clinical training programs

Community engaged comprehensive syphilis prevention

- Leverage community partnerships
- Person centered education
- Social media and public service announcement campaigns

Innovative syphilis screening and treatment strategies

- Community Outreach
- Mobile services
- Telemedicine
- Home testing

Enhance awareness and prevention of congenital syphilis

- IL HIV Perinatal Hotline expansion to include syphilis ¹
- CDPH and health institution engagement with CDC regional centers²

Goal 2: Support Syndemic Research & Expand Collaborations with the CDC to develop syphilis self-tests or at home testing



 Collaboration between CDPH, community partners, academic centers and other healthcare providers to disseminate up to date research and guidance

platforms to disseminate up-to-

date research related to syphilis

Promote point-of-care applications for providers for STI diagnosis and treatment support

- Increase awareness and use of existing CDC mobile app to provide clinical support for diagnosis and treatment of STIs at the point of care
- Support research examining types and effectiveness of point of care clinical tools

Development of self-tests or athome tests for syphilis

- Work with CDC and other scientific collaborators to develop syphilis self-testing able to differentiate between past and current infection
- Exploratory studies to evaluate settings to implement self testing approaches

Goal 3: Reduce Syphilis Related Health Disparities and Inequities



Promote and normalize STI testing as part of routine healthcare

- Highlight syphilis testing as part of routine STI testing
- Public awareness campaigns, medical provider/health organization outreach
- Encourage use of existing guidelines for creating and implementing sexual health services in primary care¹

Promote STI testing being bundled with HIV testing

- Outreach and education to providers
- Public awareness campaigns

Engage and actively collaborate with diverse community partners to implement public awareness campaigns

- Focus on communities disproportionately affected by STIs
- Culturally and linguistically appropriate, community informed

Promote integration of STI services with community support services to address SDOHs

- Engage STI service providers to screen for Social determinants of health (SDOH) needs and referral to resources at the point of STI service
- Provide resources and implementation guides to enable STI service providers to integrate SDOH assessment
- Leverage existing community SDOH resources

Assess and address barriers to access STI services

- Assess and address barriers such as cost, availability, ease of access
- Partnership with existing providers and health systems
- Review existing systems involved in care and identify areas for improvement and enhancing existing services
- Encourage community advisory boards and/or engage CBOs for input



Goal 4: Promote More Integrated and Coordinated Efforts to Address the Syphilis Syndemic in Chicago

Integrate STI awareness, education and referral to services other syndemic services

- Integration across all syndemic services
- Examples include people with unstable housing or substance use disorder

Expand syphilis and HIV screening in Emergency Departments in high prevalence areas

- Promote health systems evaluating feasibility and implementation where not currently offered
- Support adaptation of existing models to expand access to syphilis testing

Raise awareness of and support implementation of doxycycline post-exposure prophylaxis (PEP) for syphilis

- CDPH and partners to collaborate to provide local doxy-PEP recommendations
- Disseminate data regarding doxy-PEP to service providers and community partners

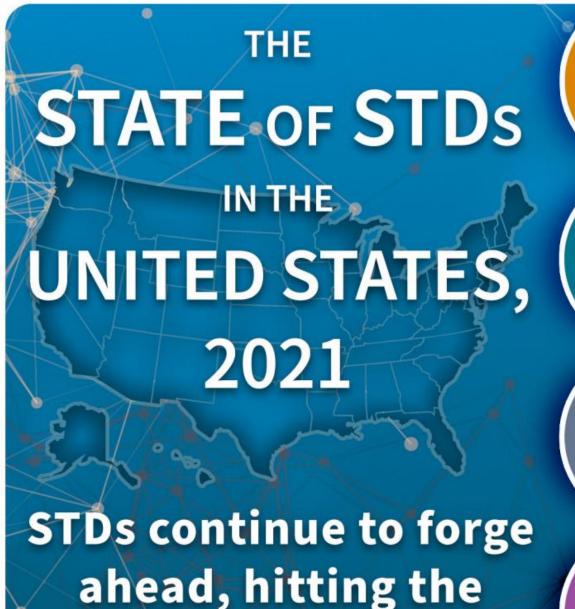


Biomedical Interventions- Doxycycline as a Post-Exposure Prophylaxis

Dr. Aniruddha Hazra

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nation hard.



1.6 million CASES OF CHLAMYDIA

3.8% decrease since 2017



28% increase since 2017

176,713 CASES OF SYPHILIS

74% increase since 2017

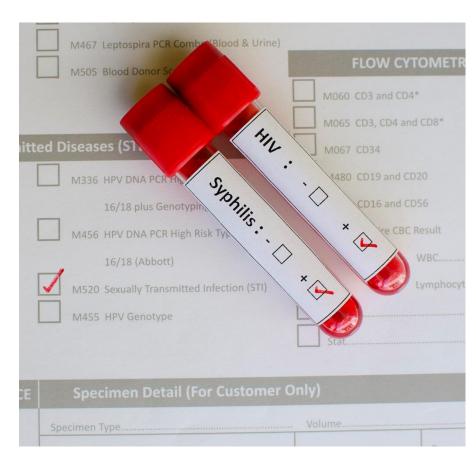
2,855
CASES OF SYPHILIS AMONG NEWBORNS

203% increase since 2017



Syphilis and HIV

- Syphilis thought to facilitate HIV acquisition and transmission
 - HIV can be found on syphilitic lesions
 - Syphilis infection cause transient increase of HIV VL
- Epidemiological link between syphilis and HIV
 - High rates of HIV co-infection, particularly among MSM and TWSM
 - One study found median time to HIV diagnosis to be 1.6 years
- Increased morbidity in PWLH
 - Early neurosyphilis and ocular syphilis
 - Higher rates of treatment failure



Zetola NM, Klausner JD. Syphilis and HIV infection: an update. Clin Infect Dis. 2007 May 1;44(9):1222-8.



A Vicious Cycle: STDs predict future HIV Risk



Rectal GC or CT



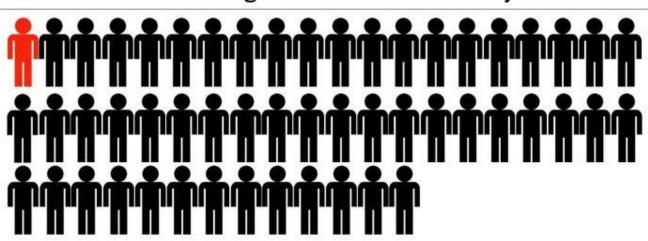
1 in 15 MSM were diagnosed with HIV within 1 year.*

Primary or Secondary Syphilis



1 in 18 MSM were diagnosed with HIV within 1 year. **

No rectal STD or syphilis infection



1 in 53 MSM were diagnosed with HIV within 1 year.*

X Doxycyline

- Second-generation tetracycline antibiotic
- Widely available, inexpensive, and well tolerated
- Broad spectrum of anti-microbial activity
- Used to treat multiple STIs
 - 1st line therapy for Chlamydia trachomatis infections
 - Alternative therapy for P&S syphilis infections
 - No longer used to treat N.gonorrhea due to resistance
- Teratogenic drug class, contraindicated in pregnancy
 - Review by the Teratogen Information System (TERIS) concluded that therapeutic doses during pregnancy are unlikely to pose a substantial teratogenic risk
 - Data are insufficient to state that there is no risk





Doxycyline Pre-exposure Prophylaxis (DOXY PrEP)



- Randomized controlled pilot study of MSM LWH
- Subjects (n=30) were block randomized
 - Doxycycline hyclate 100mg daily for 36 weeks
 - Incentive-based arm for remaining STD-free (in addition to compensation to enroll in study)
- 73% reduction in syphilis, gonorrhea, or chlamydia in those taking Doxy PrEP with no difference in reported sexual behaviors between the two groups.





Doxycyline Post-exposure Prophylaxis (DOXY PEP)

- Open-label extension of the ANRS IPERGAY trial in France
- MSM and TWSM without HIV (n=232) were randomly assigned (1:1)
 - single dose of 200 mg doxycycline within 24h after sex
 - no prophylaxis
- Primary endpoint was the occurrence of a first STI (gonorrhea, chlamydia, or syphilis) during the 10-month follow-up







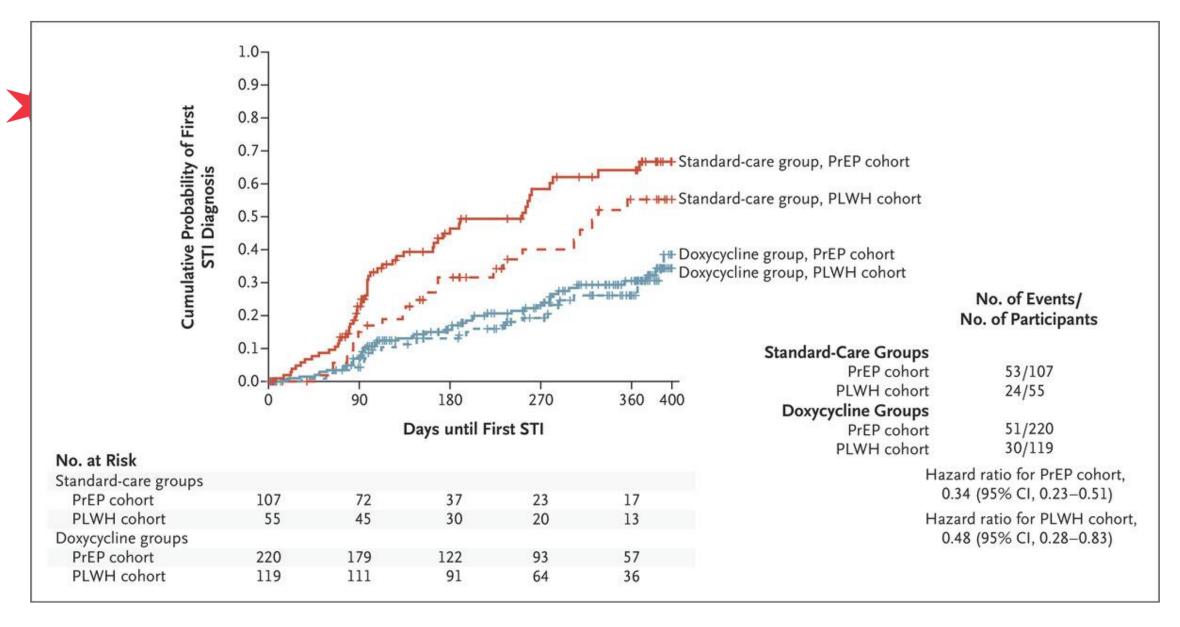




- Doxy PEP reduced the occurrence of a first episode of bacterial STI by 47%
 no significant difference in reported sexual behaviors
- Reduction of chlamydia and syphilis infections by 70% and 73% respectively with 200mg Doxy PEP
- Rates of gonococcal infections between the two groups did not differ
 - No change in genotypic markers of tetracycline resistance
- No HIV seroconversions were observed



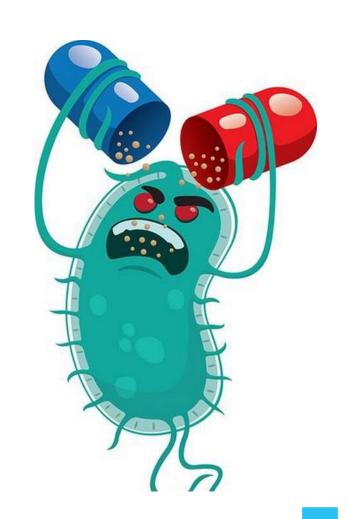
Study	Population (n)	DoxyPEP use	Primary Finding	Comments
IPERGAY Molina et al. Lancet ID 2018	HIV-neg MSM (n=232)	3.4 doses/mo (86% coverage)	47% reduction in first STI No difference in GC	homogenous study population
DoxyPEP Luetkemeyer et al. NEJM 2023	MSM/TWSM (HIV-neg n=327) (LWH n=174)	4 doses/mo (86% coverage)	66% reduction in first STI GC, CT, and syphilis	<5% TWSM
DOXYVAC Molina et al. CROI 2023	HIV-neg MSM (n=700)	3.5 doses/mo (83% coverage)	65% reduction in first STI GC, CT, and syphilis	homogenous study population
dPEP-KE Stewart et al. CROI 2023	HIV-neg ciswomen (n=449)	? doses/mo (78% coverage)	No reduction in first STI	4 social harms reported in doxyPEP group
SYPHILAXIS Haire et al. NCT03709459	HIV-neg MSM (enrolling)			
DISCO Grennan et al. NCT04762134	MSM (not yet enrolling)			





Concern for Antimicrobial Resistance

- Tetracycline resistance already seen in gonorrhea (GC), higher in MSM
- Chlamydia (CT) treatment failure see in 5-23% of cases, however clear resistance to tetracycline not identified
- Mycoplasma genitalium (MG) emerging cause of NGU in MSM, seeing resistance to tetracycline this is a real concern
- No established standards for identifying or measuring doxycycline resistance in GC, CT, MG, or syphilis
- Concern for resistance of commensal flora (staphylococcus, streptococcus, etc)





K Gauging Current Interest

- Survey of MSM and TWSM seen at STI Clinics in Toronto and Vancouver found:
 - 60.1% would be willing to use doxy PEP
 - 44.1% would be willing to use doxy PrEP
- Survey of Australian MSM found:
 - 52.7% would be very or slightly likely to use doxycycline to prevent syphilis
 - 75.8% felt very or slightly strongly that chemoprophylaxis would help reduce syphilis infections in their communities

Fusca L, Hull M, Ross P, et al. Exposure Prophylaxis Among Gay, Bisexual and Other Men Who Have Sex With Men in Vancouver and Toronto. Sex Transm Dis. 2020 Jan 17. Epub ahead of print





K Gauging Current Interest & use

- Large multi-city sample of individuals using a gay social networking app
 - 84% of participants expressed interest in trying doxy PEP
 - African-American and Latinx respondents had higher interest in doxycycline-PEP than White respondents
- Prevalence of doxycycline PEP/PrEP use in Seattle
 - 9.3% reported already using doxycycline prophylaxis
 - Willingness to take doxycycline prophylaxis was more common among those with HIV (62%) or on PrEP (60%)

Spinelli MA, et al. High Interest in Doxycycline for Sexually Transmitted Infection Postexposure Prophylaxis in a Multicity Survey of Men Who Have Sex With Men Using a Social Networking Application. Sex Transm Dis. 2019;46(4):e32-e34.





X Target Population for DoxyPEP

- Large proportion of STIs occur among those with repeat infections
- In Massachusetts between 2014-2016
 - 0.2% of the general population acquired ≥1 repeat STI diagnoses
 - Accounted for 27.7% of all STIs during the same period
- "Core" disease transmitters disproportionately effected by STI morbidity
- Novel STI prevention efforts need to start with this population





So where do we go from here?

Several questions/concerns remain:

- Long term safety and AE data needed
- Clearly identify target population
- Monitoring resistance to STIs as well as commensal flora
- Education efforts, distinguishing HIV PEP/PrEP from Doxy PEP/PrEP

Urgency of ongoing STI burden on MSM and TWSM compels us to act now

🗼 Déjà-vu all over again?

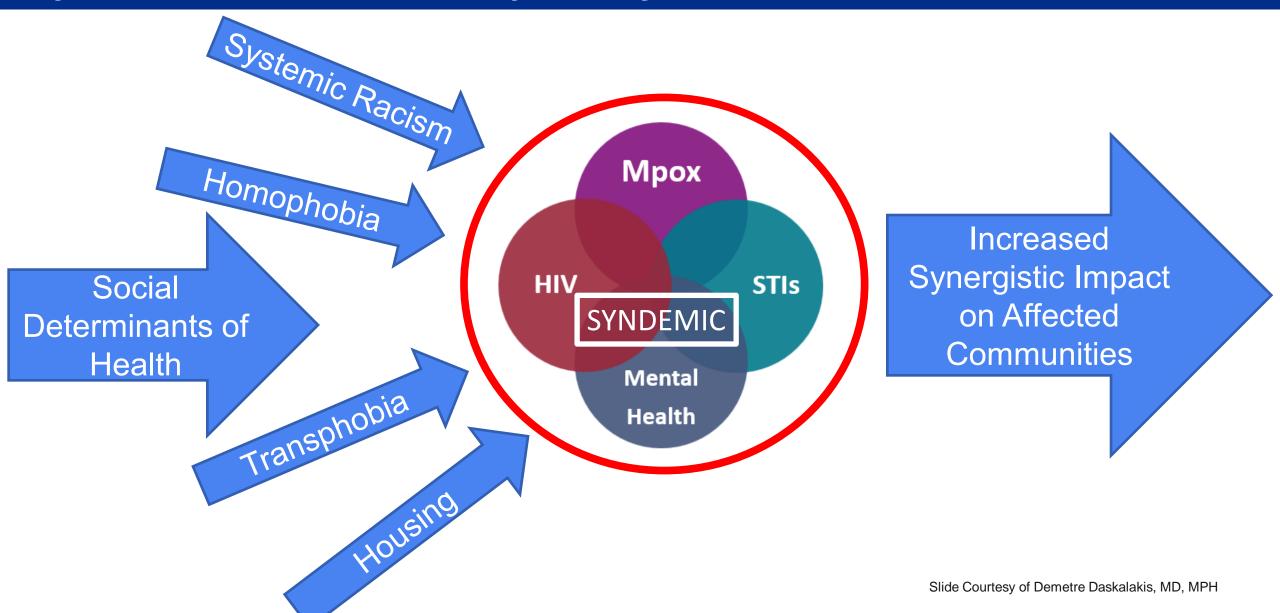
Striking similarities between HIV PrEP and DoxyPEP

- Novel biomedical intervention w/significant impact in priority populations
- Concerns of anti-microbial resistance/misuse
- Equity concerns regarding utilization and uptake
- Data in cisgender women are lacking

So what's different now?

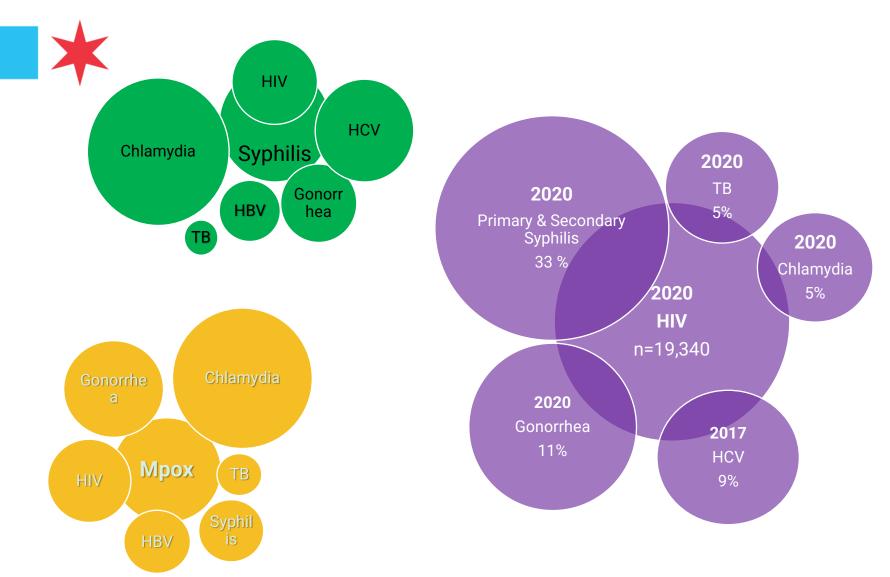
- Signals of higher interest in Black and Hispanic/Latinx men
- WE SHOULD KNOW AND DO BETTER

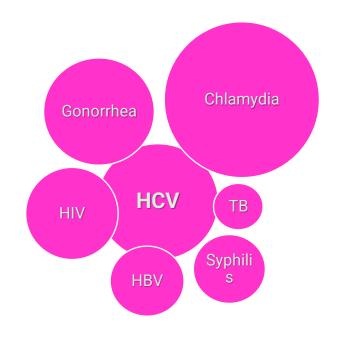
Syndemic Problems Require Syndemic Solutions



Extra

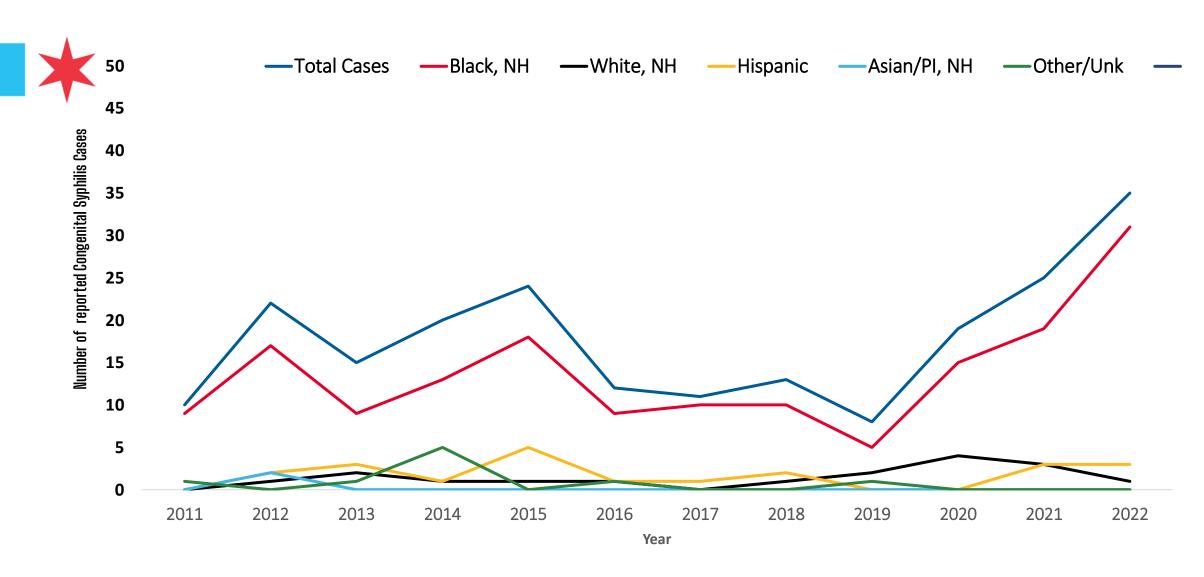
Syndemics in Chicago





Source: City of Chicago internal data as of 12/28/2021; Chicago Department of Public Health. HIV+STI Data Report, 2020. Chicago, IL: City of Chicago; September 2022.

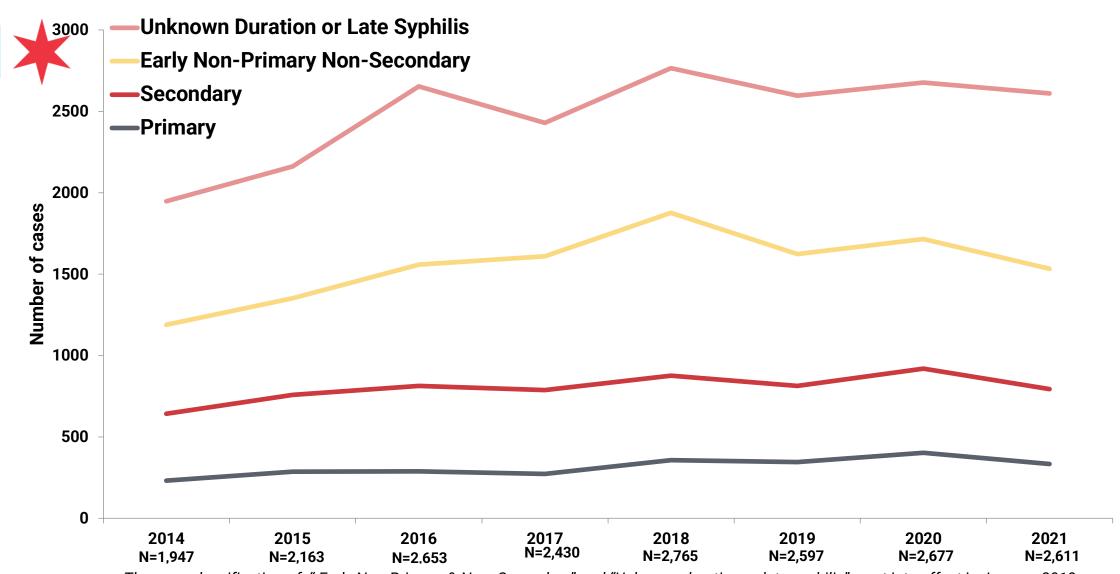
CS Cases by Race/Ethnicity, Chicago, 2010-2022*







All Stages of Syphilis, Chicago, 2014-2021



The case classification of "Early Non-Primary & Non -Secondary" and "Unknown duration or late syphilis" went into effect in January 2018 During 2014-2017, cases in this category include cases classified as early latent, late latent and late syphilis with clinical manifestations

Number of Reported P & S Syphilis Cases by Age group, 2001-2021

