

Intersecting epidemics: STIs, HIV, and substance use disorder

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STD/HIV
Prevention Training Center
JOHNS HOPKINS
MEDICINE

Overview

- Context
- Mini STI review
- National trends in HIV/STIs, substance use
- Intersectional examples
- Opportunities for integrated care
- Pennsylvania initiatives
- Resources

Show of
hands!
Are you
a....



Medical provider (MD, DO, NP, PA, RN)?



Social worker?



Behavioral health worker (therapist,
counselor, navigator)?



Public health worker?



Student?

Individual and Structural Factors



Substance use is a determinant of sexual health

Alcohol & substance use can increase the risk of HIV/STI acquisition

Linked with multiple sex partners, concurrent sexual partnerships, inconsistent condom use, exchange of sex or drugs for money

1980-1990s: crack cocaine and heterosexual syphilis

More recently: Methamphetamine & Injection use



Mini STI Review

Infections characterized
by urethritis, cervicitis
(discharge)

Gonorrhea
Chlamydia

Infections characterized
by sores

Syphilis
Herpes
And more...

We won't be talking about: Human Papillomavirus (HPV), Trichomonas, Herpes, Mycoplasma genitalium, and other more rare diseases

Gonorrhea and Chlamydia

- Bacterial infections
- Can infect the urogenital tract, throat and rectum
- Why we care:
 - Women can develop infertility
 - Infection can increase risk of HIV acquisition
 - Vertical transmission
- Treatment
 - Antibiotics
 - Rising concern for antimicrobial resistance in gonorrhea

Gonorrhea urethritis



Source: Usatine RP, Smith MA, Mayeaux EJ Jr, Chumley H, Tysinger J:
The Color Atlas of Family Medicine: www.accessmedicine.com
Copyright © The McGraw-Hill Companies, Inc. All rights reserved.

Gonorrhea and Chlamydia

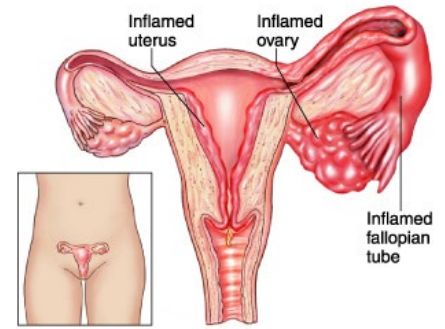
Normal cervix



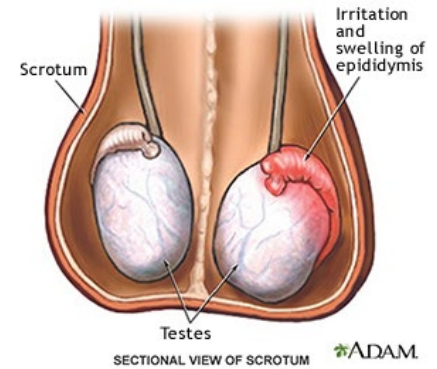
Cervicitis



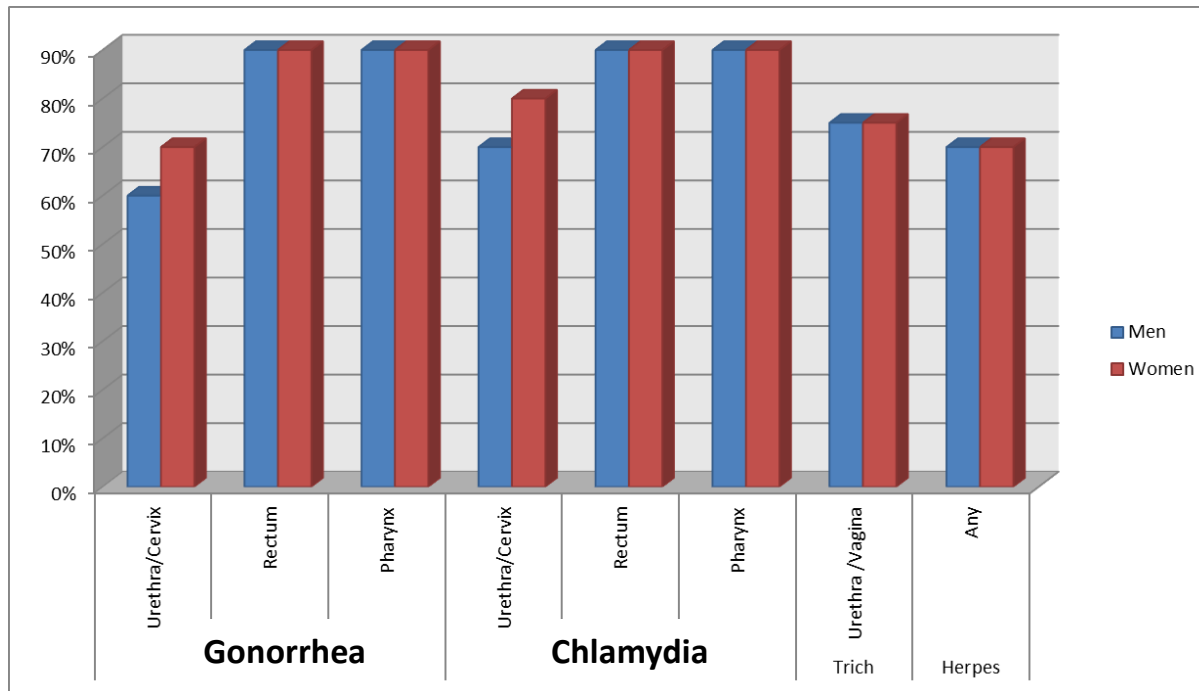
Pelvic Inflammatory Disease



Epididymitis



Most infections are asymptomatic!



Syphilis

- Bacterial infection
- Primary syphilis- ulcer/“chancre”
- Secondary syphilis- rash
- Neurosyphilis
- Ophthalmic and Otic Syphilis
- Asymptomatic= Latent



Syphilis- Why do we care?

- Neurosyphilis
 - Can have permanent vision loss, hearing loss, and stroke-like complications
- Increases risk for HIV acquisition
- Congenital syphilis
 - More on this in a second

Syphilis Diagnosis

- Requires detection of **two** types of antibodies
- Need help with interpreting labs?
- Need records on prior testing?
- Call your friendly local health department!!!

Treponemal	FTA-Abs, TPPA, EIA/CIA, MHA-TP
Non- Treponemal tests	RPR, VDRL

Congenital Syphilis

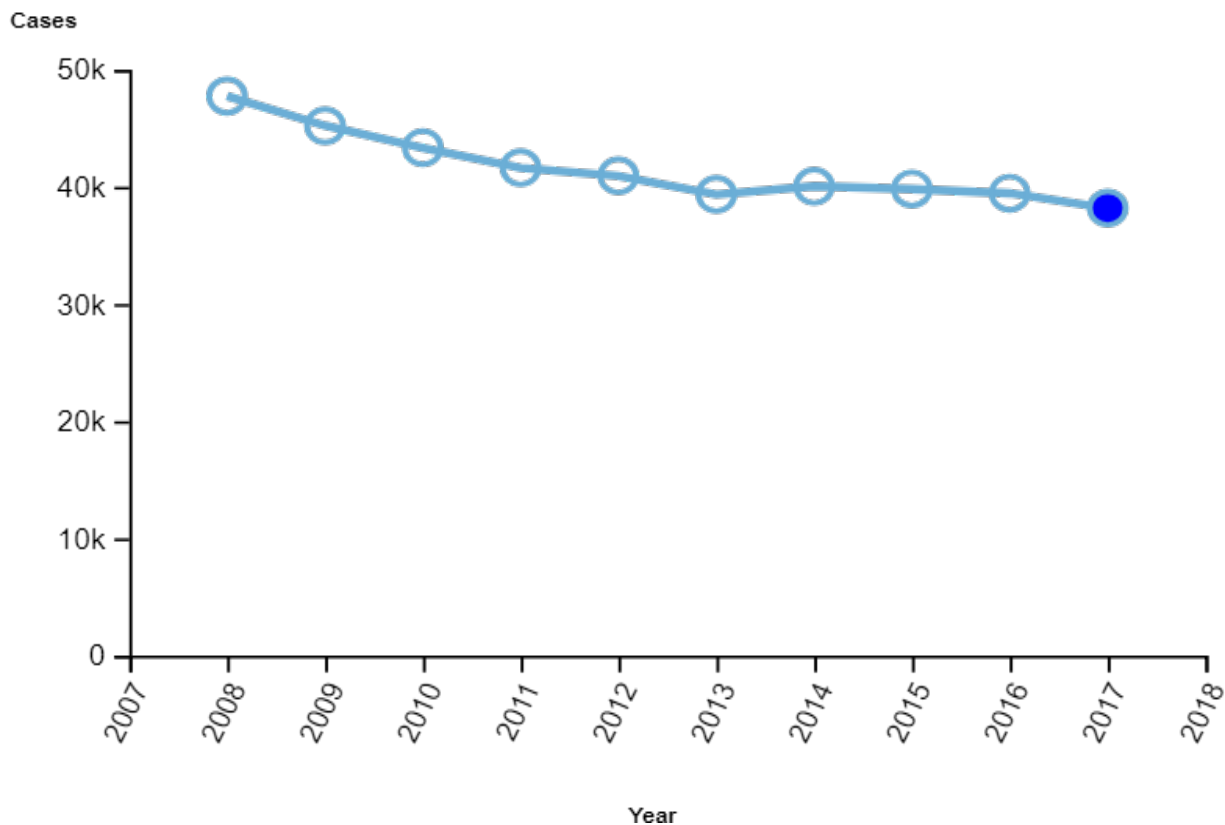
- Transmission of syphilis from pregnant mother
- Left untreated, can lead to:
 - Stillbirth
 - Neonatal death
 - Neonatal deafness, neurologic impairment, bone abnormalities
- Screening for pregnant women- CDC
 - First prenatal visit
 - Third trimester
 - At delivery
 - Any stillborn infant



] If at high risk

National Trends in HIV/STIs & Substance Use Disorder

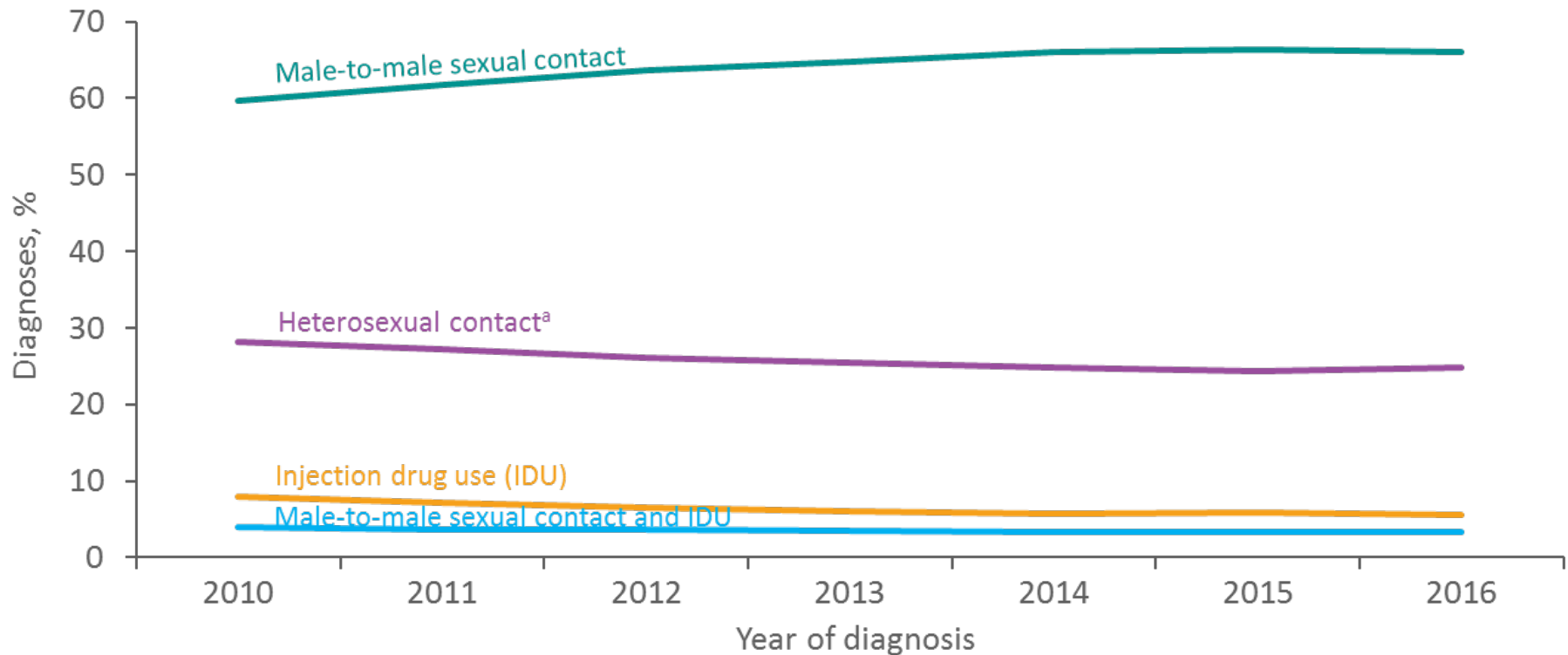
Total HIV diagnoses | 2017 | United States



Footnotes: HIV data for the year 2017 are preliminary and based on 6 months reporting delay.



Diagnoses of HIV Infection among Adults and Adolescents, by Transmission Category, 2010–2016—United States and 6 Dependent Areas

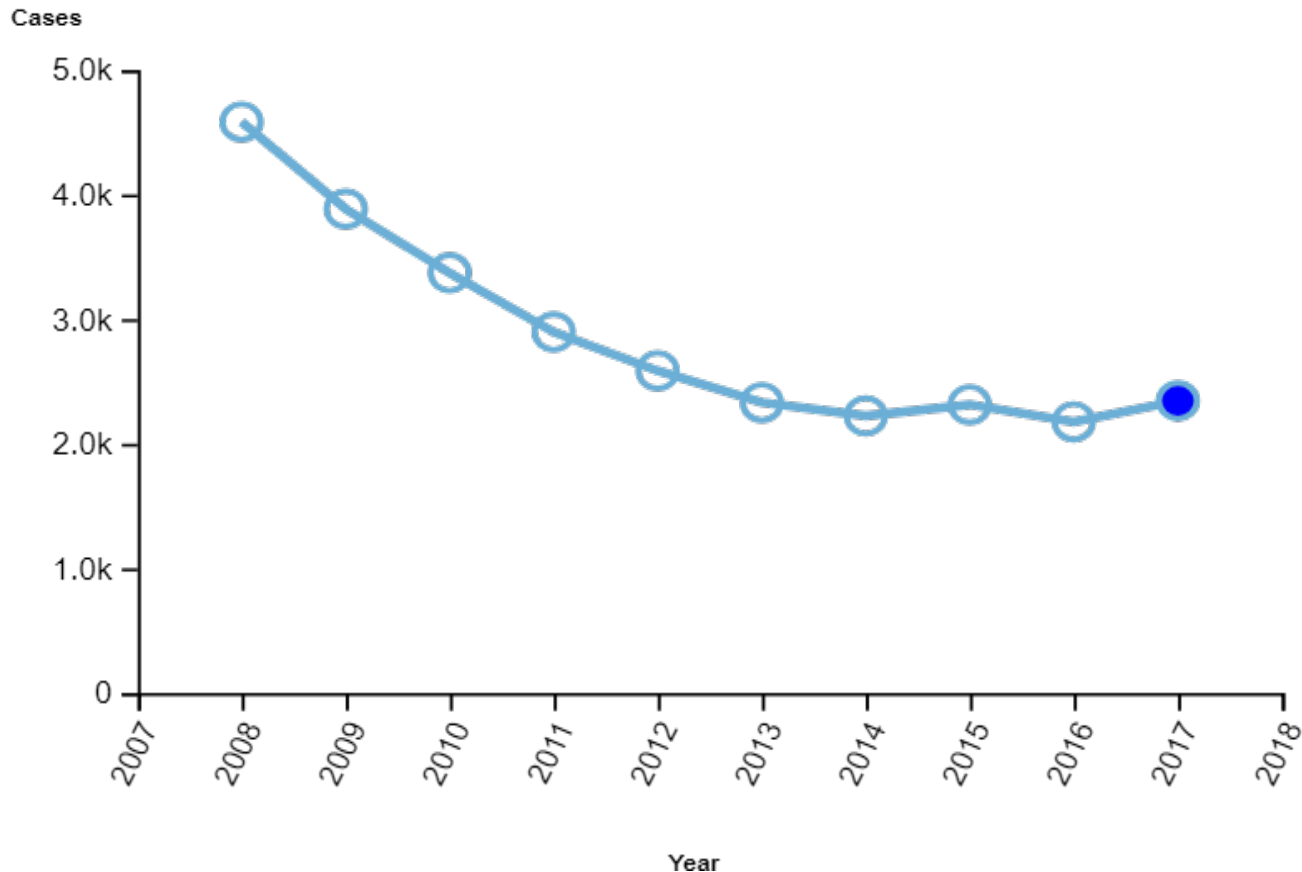


Note. Data have been statistically adjusted to account for missing transmission category. “Other” transmission category not displayed as it comprises less than 1% of cases.

^a Heterosexual contact with a person known to have, or to be at high risk for, HIV infection.



HIV diagnoses | 2017 | Injection drug use | United States

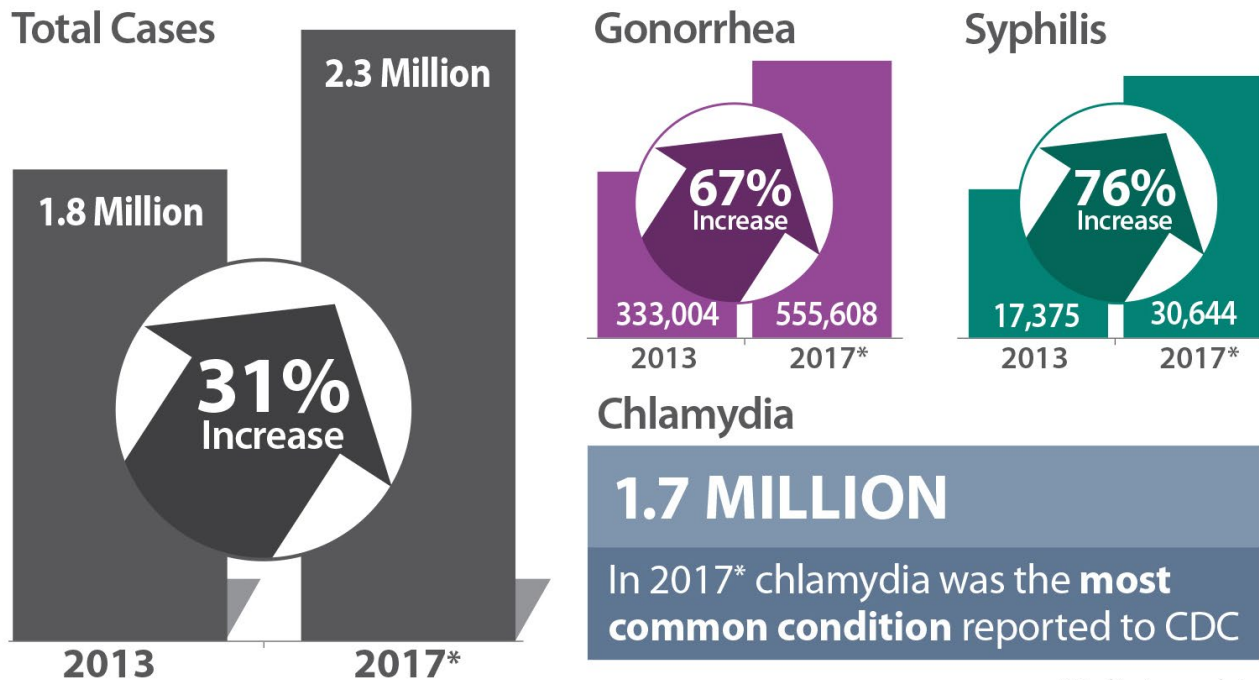


Footnotes: HIV data for the year 2017 are preliminary and based on 6 months reporting delay. Data adjusted for missing transmission category.



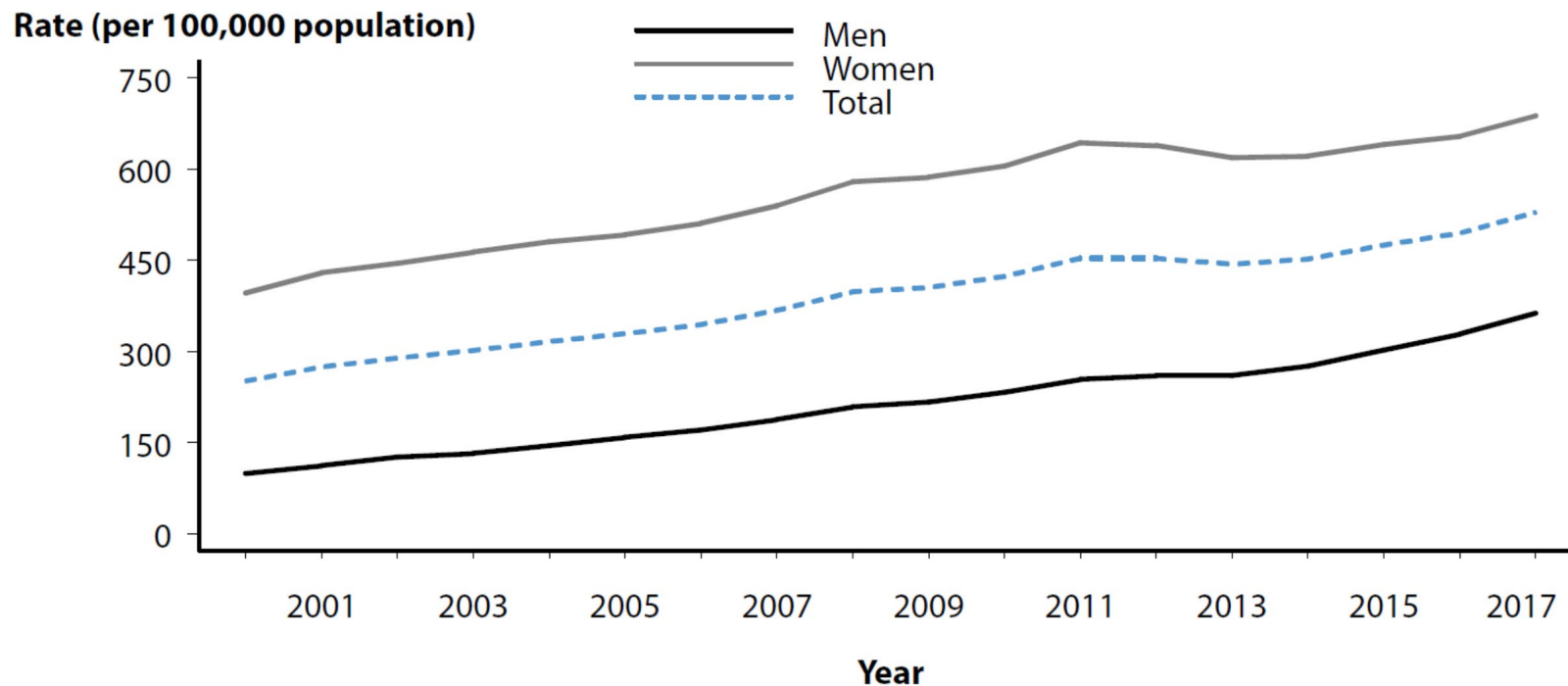
THE U.S. IS EXPERIENCING STEEP, SUSTAINED INCREASES IN SEXUALLY TRANSMITTED DISEASES

Combined diagnoses of chlamydia, gonorrhea, and syphilis **increased sharply over the past five years**



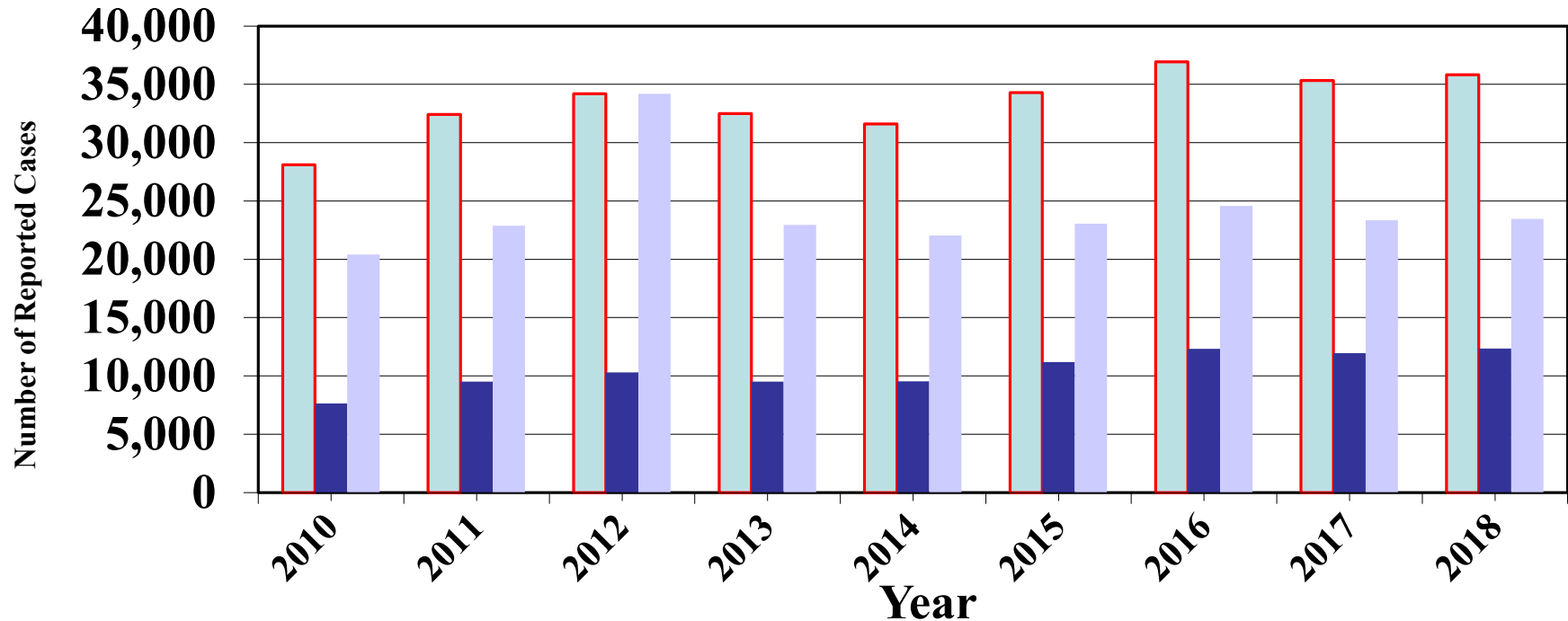
*Preliminary data

Chlamydia — Rates of Reported Cases by Sex, United States, 2000–2017



NOTE: Data collection for chlamydia began in 1984 and chlamydia was made nationally notifiable in 1995; however, chlamydia was not reportable in all 50 states and the District of Columbia until 2000. Refer to the National Notifiable Disease Surveillance System (NNDSS) website for more information: <https://wwwn.cdc.gov/nndss/conditions/chlamydia-trachomatis-infection/>.

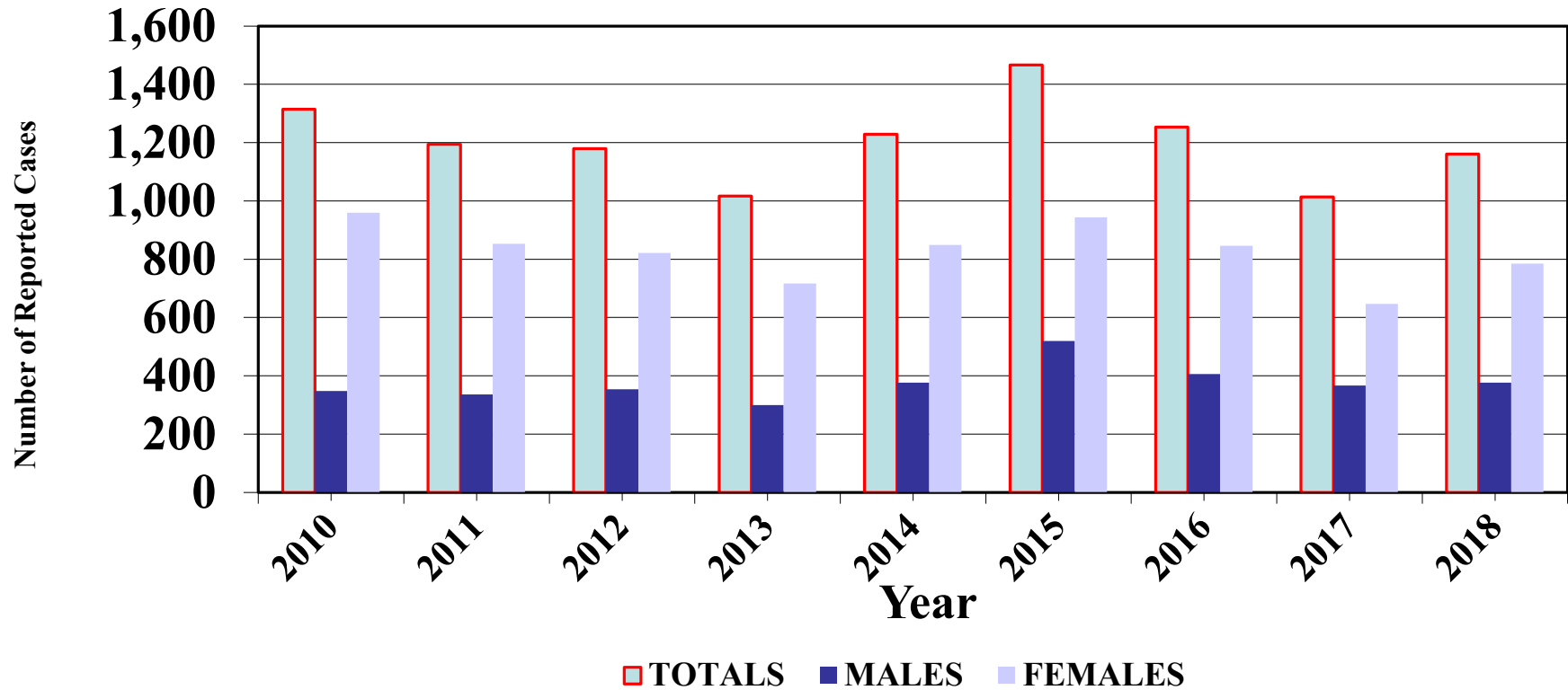
Reported Cases of Chlamydia By Gender Pennsylvania 2010 through 2018



*Exclusive of Philadelphia

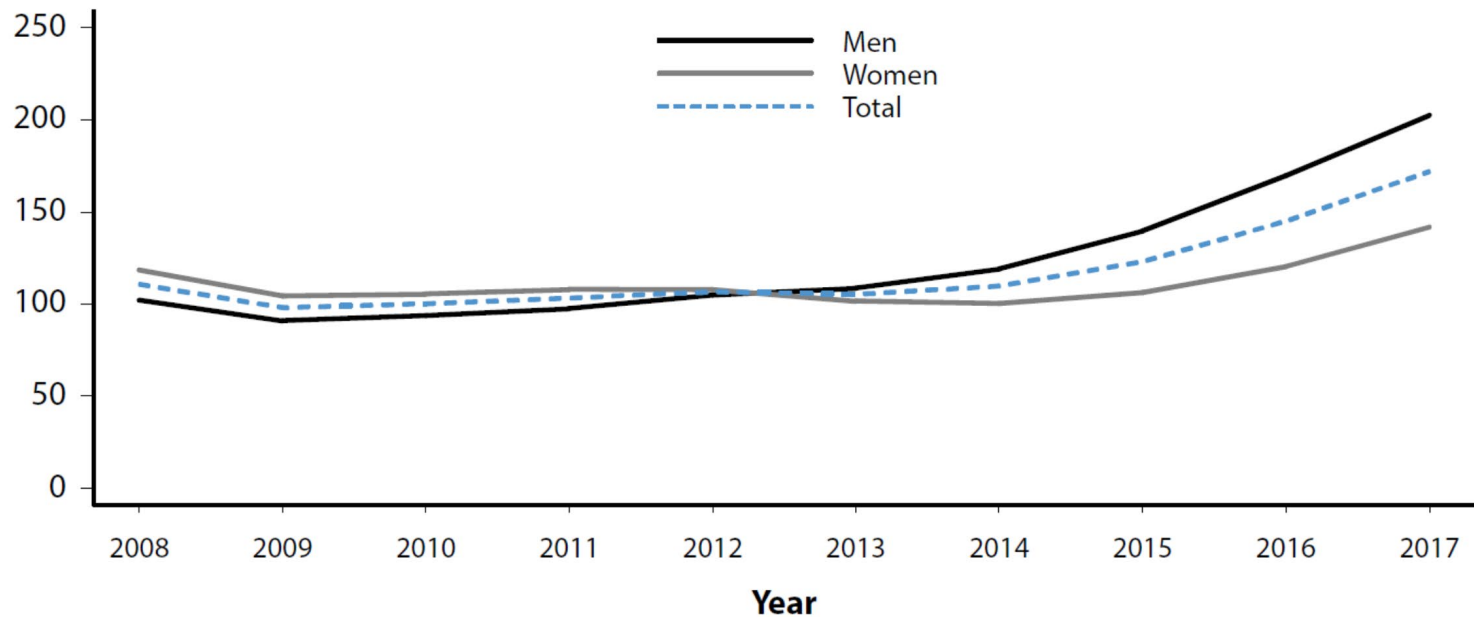
■ TOTALS ■ MALES ■ FEMALES

Reported Cases of Chlamydia By Gender Lancaster County 2010 through 2018

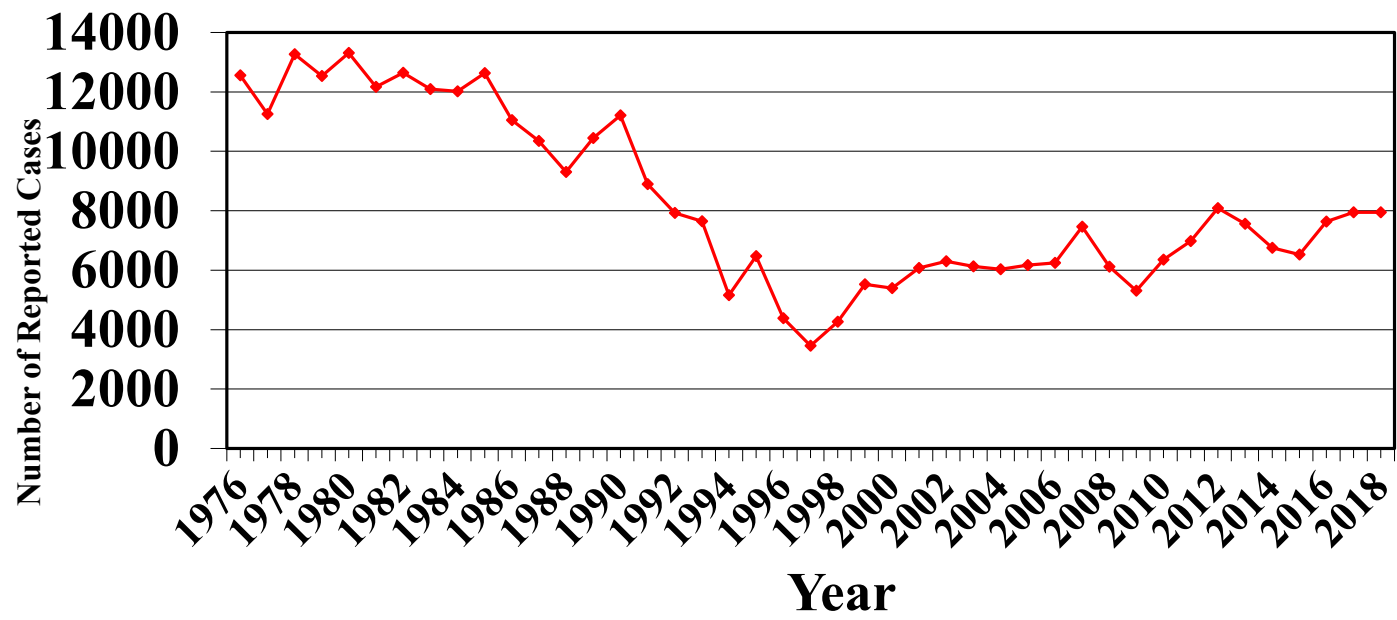


Gonorrhea — Rates of Reported Cases by Sex, United States, 2008–2017

Rate (per 100,000 population)

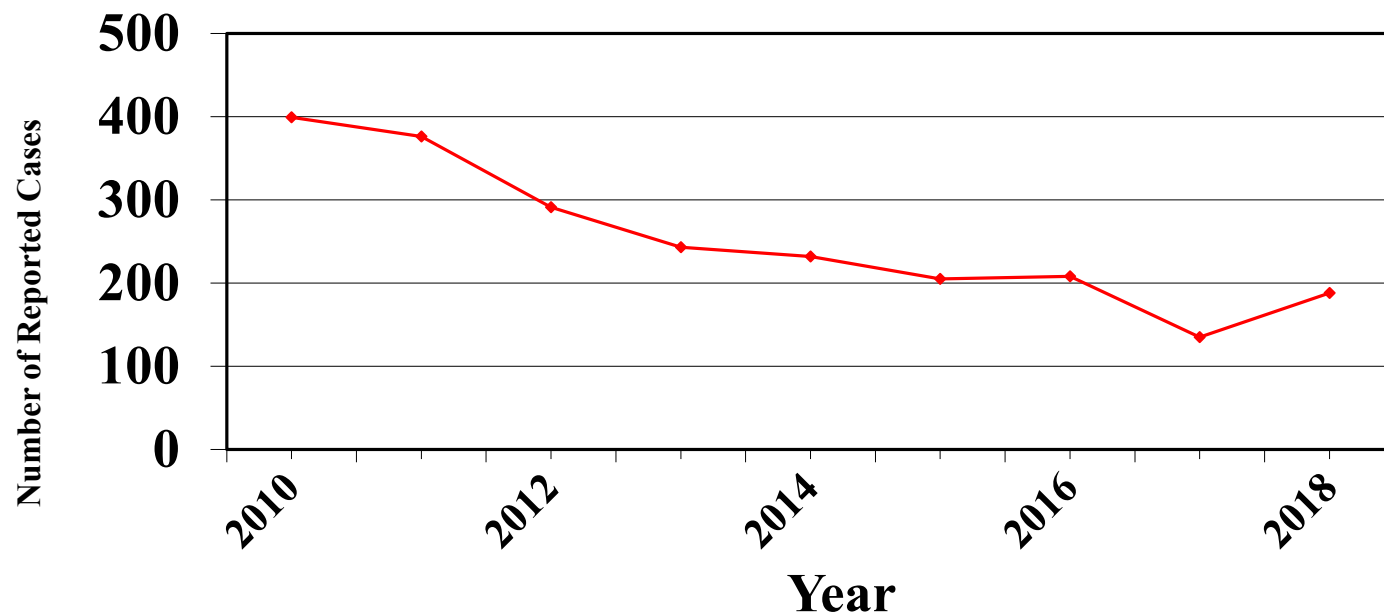


Reported Cases of Gonorrhea in Pennsylvania 1976 through 2018

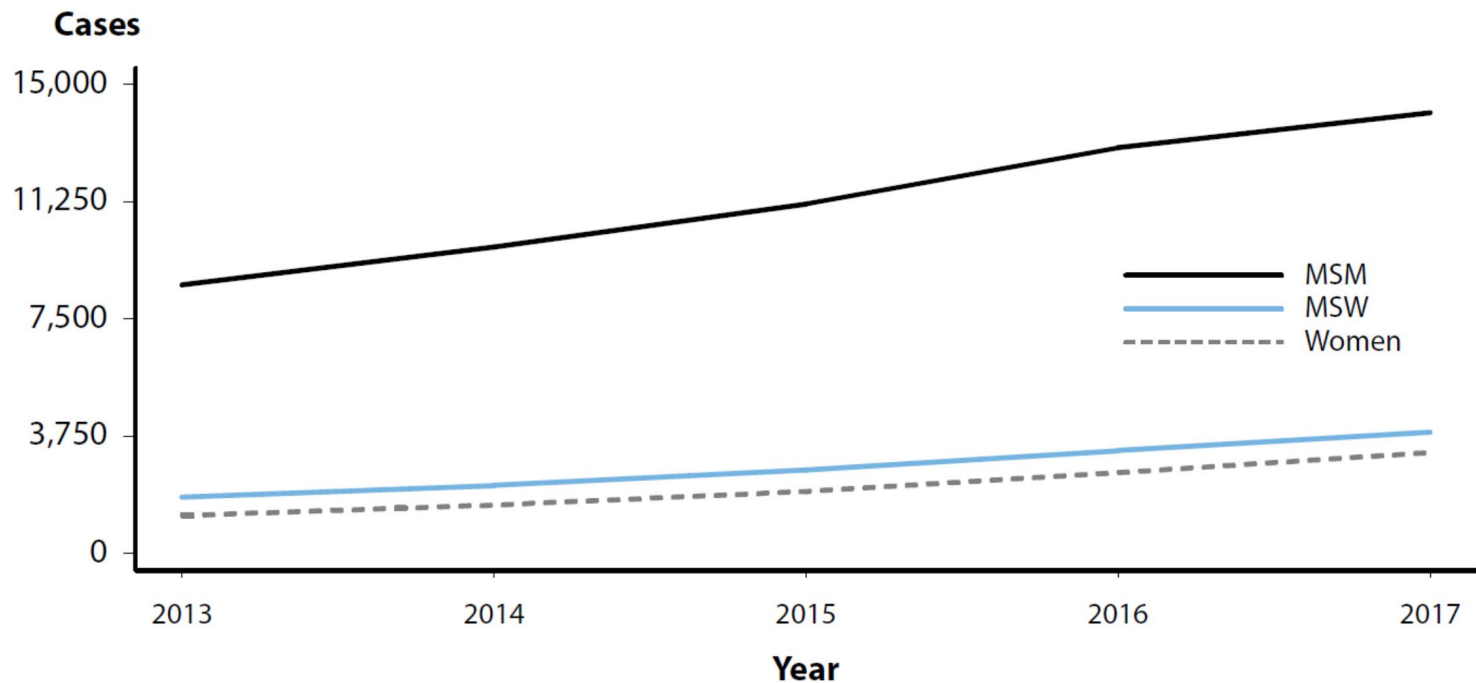


*Exclusive of Philadelphia

Reported Cases of Gonorrhea Lancaster County 2010 through 2018

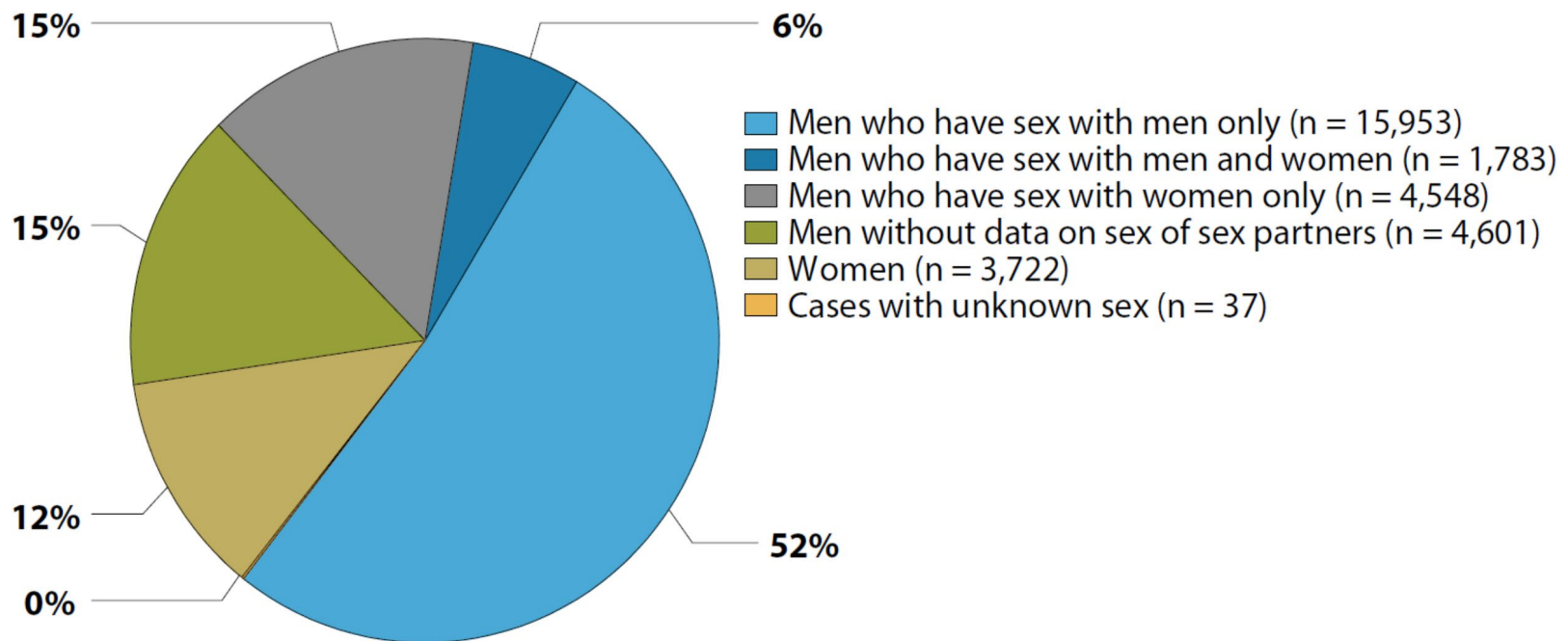


Primary and Secondary Syphilis — Reported Cases by Sex and Sexual Behavior, 37 States*, 2013–2017

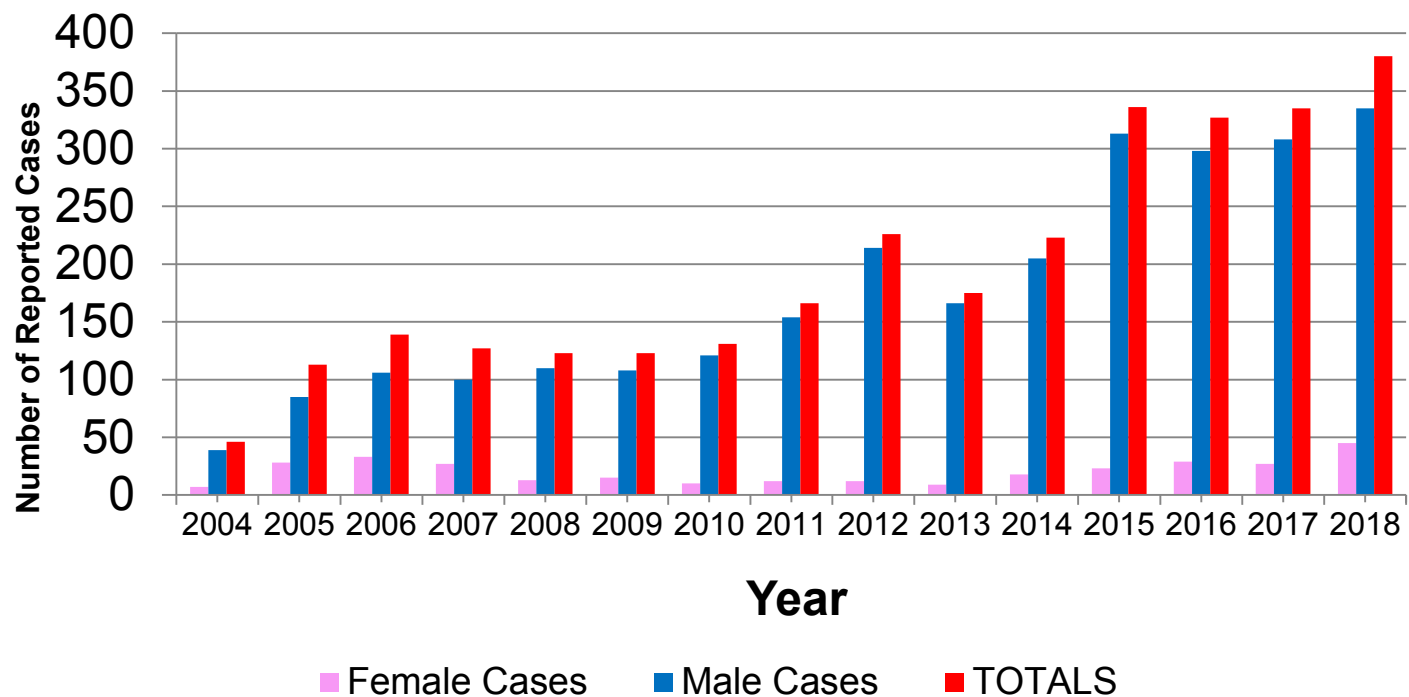


* 37 states were able to classify $\geq 70\%$ of reported cases of primary and secondary syphilis as either MSM, MSW, or women for each year during 2013–2017.
ACRONYMS: MSM = Gay, bisexual, and other men who have sex with men (collectively referred to as MSM); MSW = Men who have sex with women only.

Primary and Secondary Syphilis — Distribution of Cases by Sex and Sexual Behavior, United States, 2017

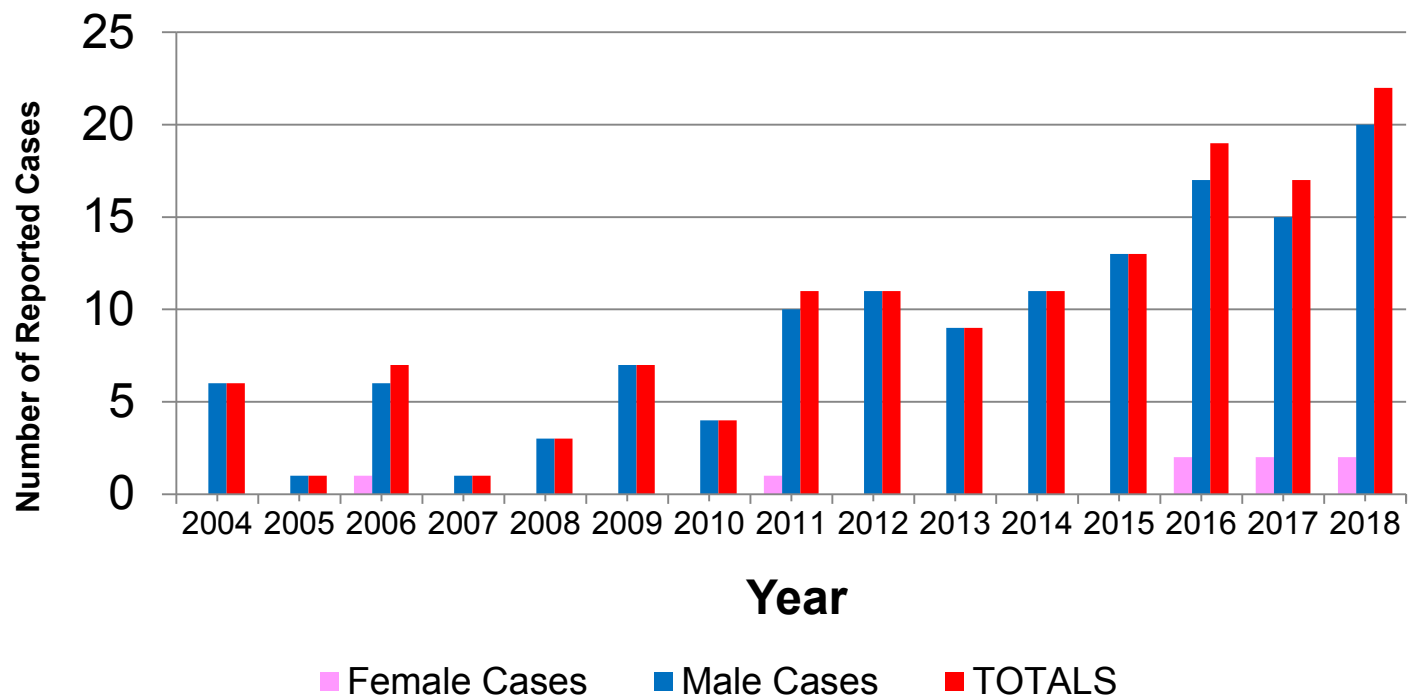


Reported Cases of Primary and Secondary Syphilis in Pennsylvania 2004 to 2018



* Exclusive of Philadelphia

Reported Cases of Primary and Secondary Syphilis in Lancaster for 2004 to 2018





SHARP INCREASES
in syphilis
among
newborns
in the US
continue



918 cases
in 2017

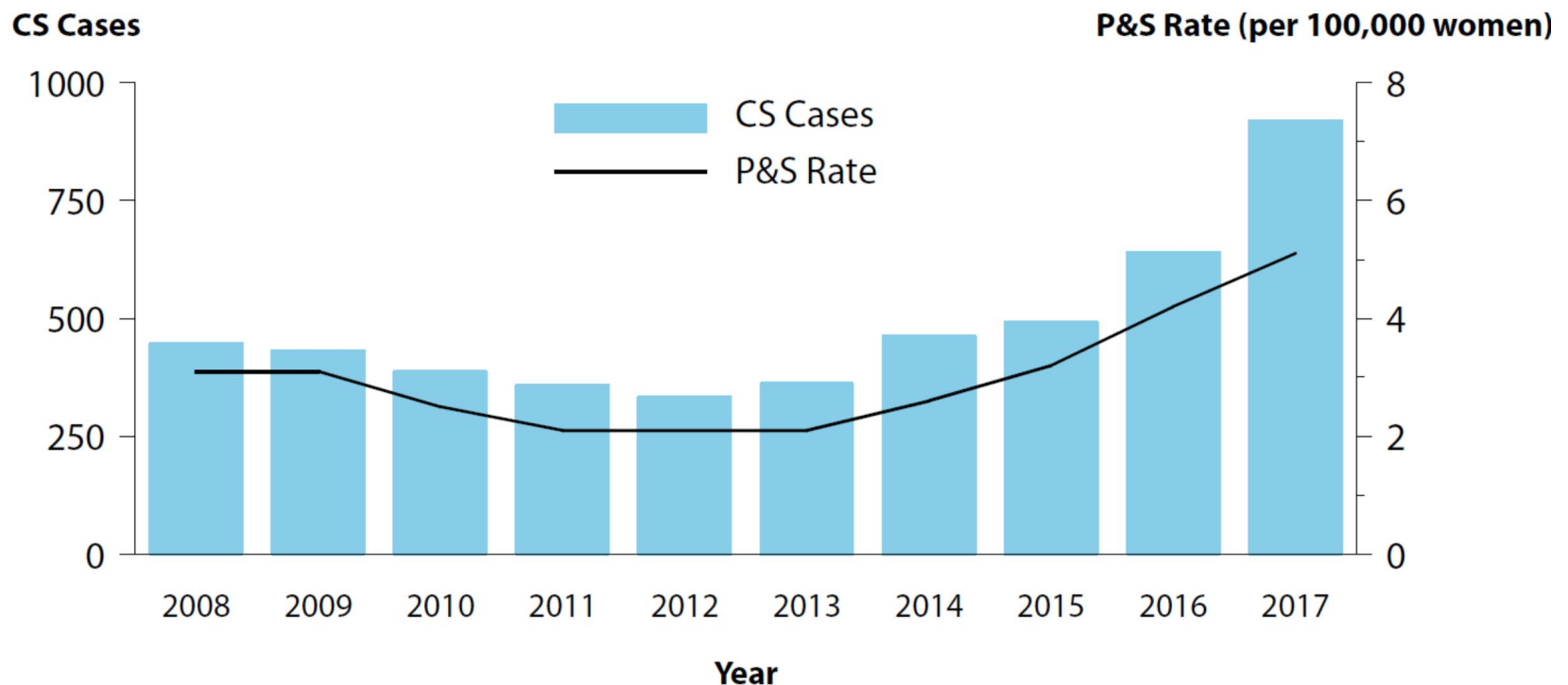
Improved
testing and
treatment
needed for
pregnant women



#STDreport

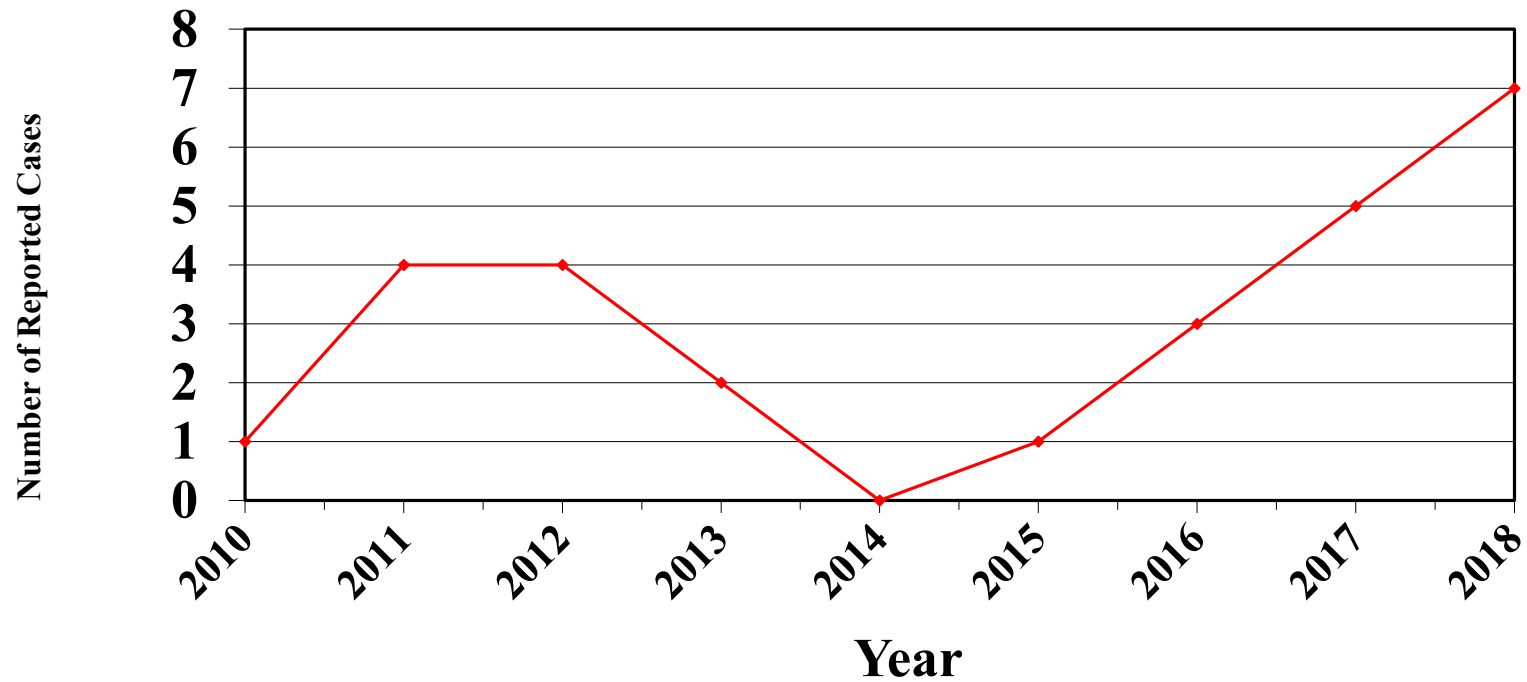
2017 STD Surveillance Report

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, 2008–2017

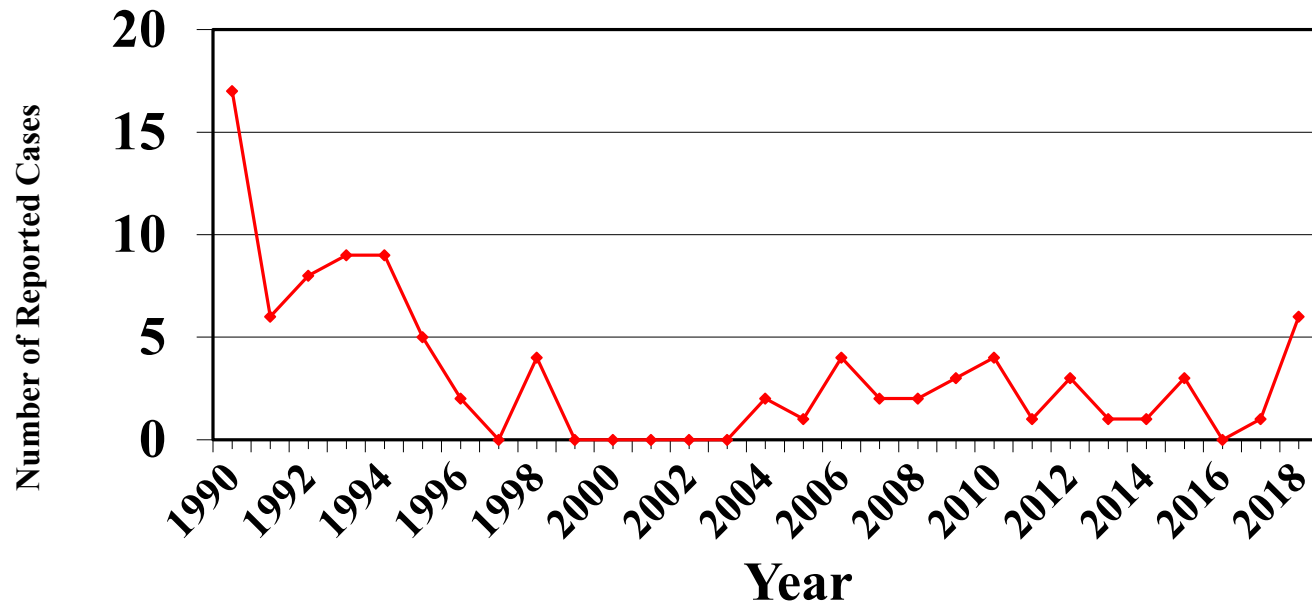


ACRONYMS: CS = Congenital syphilis; P&S = Primary and secondary syphilis.

Reported Cases of Early Syphilis Lancaster from 2013 to 2018 for Females



Reported Cases of Congenital Syphilis in Pennsylvania from 1990 through 2018

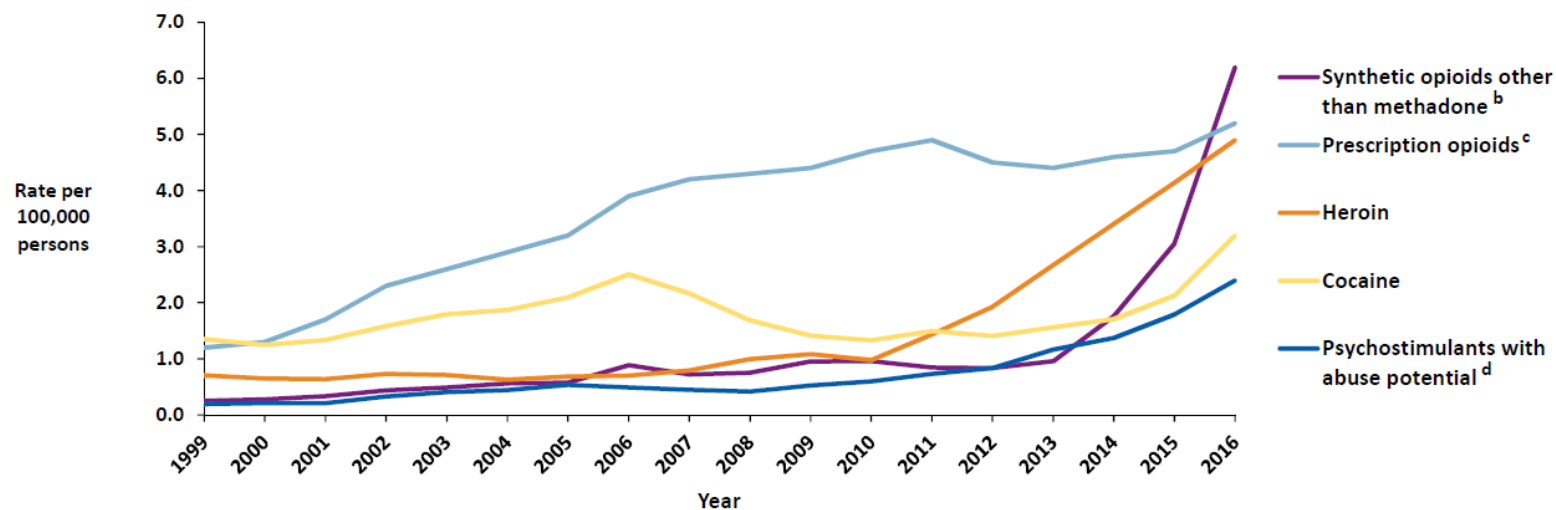


*Exclusive of Philadelphia

Intersecting Epidemics: Areas of focus

Drug Overdose Mortality

Age-adjusted rates^a of drug overdose deaths by drug or drug class and year — United States, 1999–2016



Source: National Vital Statistics System, Mortality File, CDC WONDER.

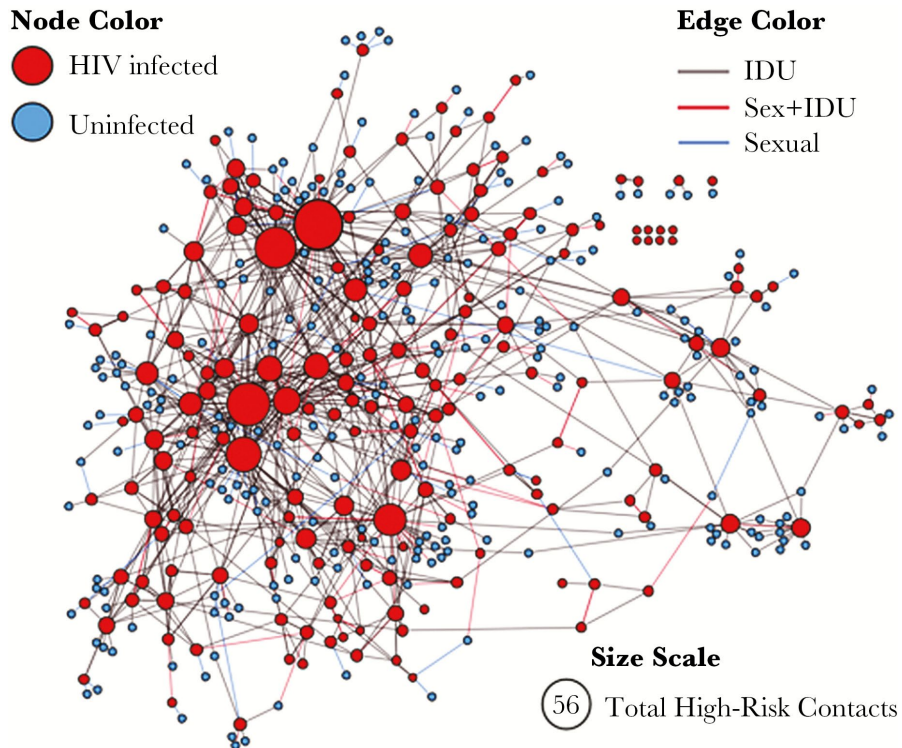
^aRate per 100,000 population age-adjusted to the 2000 U.S. standard population using the vintage year population of the data year. Because deaths might involve more than one drug, some deaths are included in more than one category. Specification on death certificates of drugs involved with deaths varies over time. In 2016, 15% of drug overdose deaths did not include information on the specific type of drug(s) involved. Some of these deaths may have involved opioids or stimulants.

^bDrug overdose deaths that involve synthetic opioids other than methadone (T40.4).

^cDrug overdose deaths that involve natural and semi-synthetic opioids (T40.2) or methadone (T40.3).

^dDrug overdose deaths that involve psychostimulants with abuse potential (T43.6).

Detailed Transmission Network Analysis of a Large Opiate-Driven Outbreak of HIV Infection in the United States



- Rural Indiana- January 2015
- By September 2016, 205 people diagnosed with HIV in a community of 4400
- Community factors:
 - 8.9% unemployment
 - 21.3% of adults had not completed high school
 - Poverty 19%
 - Limited access to health care
- Response included education, linkage to HIV/HCV care, syringe exchange services

Morbidity and Mortality Weekly Report (MMWR)

[CDC](#) > [MMWR](#)

Increased Methamphetamine, Injection Drug, and Heroin Use Among Women and Heterosexual Men with Primary and Secondary Syphilis – United States, 2013–2017

Weeklv / Februarv 15, 2019 / 68(6):144–148

Primary & Secondary Syphilis increased 73% nationally, 155.6% among women

		2013	2017
Women	Methamphetamine use	6.2%	16.6%
	Sex with PWID	4.2%	6.7%
	Used heroin	0.8%	1.7%
Heterosexual Men	Methamphetamine use	5.0%	13.3%
	Sex with PWID	3.6%	9.3%
	Use of injection drugs	2.8%	6.3%
	Used heroin	0.8%	2.7%

Morbidity and Mortality Weekly Report (MMWR)

[CDC](#) > [MMWR](#)

Increased Methamphetamine, Injection Drug, and Heroin Use Among Women and Heterosexual Men with Primary and Secondary Syphilis – United States, 2013–2017

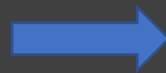
Weeklv / February 15, 2019 / 68(6):144–148

		2013	2017
Men who have sex with men	Methamphetamine use	9.2%	8.0%
	Sex with PWID	4.3%	5.2%
	Used injection drugs	3.5%	3.5%
	Used heroin	0.7%	0.8%

Congenital syphilis: Challenges

Social determinants

- Commercial sex work
- Stigma
- Mistrust of healthcare system
- Poverty
- Unstable housing
- Incarceration
- Lack of health insurance




Decreased healthcare utilization among women who use drugs

Inability to locate partners

Delays in testing & treatment

Rolfs et al, Am J Pub Health, 1990; 80
Gunn et al, Sex Transm Dis, 1995; 22



Opportunities for integrated HIV/STI care

Taking thorough Sexual & Substance Histories

- Connection to needed services depends on thorough history taking
 - Partners
 - Practices
 - Prevention of pregnancy/Protection
 - Past STI's
 - Context (substance use, exchange for money, consent, access to care)

HIV screening

- Consider integrating into primary care, behavioral health, emergency, and correctional facility settings
- Opt-out screening

Group	Screening frequency
Adults 13-64	screen at least once
Men who have sex with men	Annually if sexually active, every 3-6 months if higher risk
Higher risk: People who inject drugs Partners of PWID People engaged in transactional sex People with HIV+ partner People with >1 partner since last test	Annually or more frequently
Pregnant women	At first prenatal visit If possible exposure during pregnancy- in 3 rd trimester

STI screening

STI	Group & Frequency
Gonorrhea and chlamydia	Women <25 years: annually
	Women ≥ 25 years: a new sex partner, more than one sex partner, a sex partner with concurrent (overlapping) partners, or a sex partner who has been diagnosed with an STI
	Men who have sex with men: Annually- every 3 months
	Pregnant women: first prenatal visit if <25 or ≥ 25 years and higher risk
Syphilis	High risk women and men: commercial sex workers, persons who exchange sex for drugs, and those in adult correctional facilities- USPSTF
	Men who have sex with men: Annually- every 3 months
	Pregnant women: First prenatal visit If higher risk: third trimester and at delivery

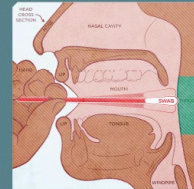
Extragenital Gonorrhea & Chlamydia Testing

- Extragenital= Testing at any body site other than genitourinary (urethral/urine/vaginal/cervix)
- Among MSM at STD clinics:
 - >70% of extragenital tests were isolated (ie, urethral testing negative)
- Among women getting pelvic exams:
 - Rectal chlamydia positivity 11-13.5%
- Among men who have sex with women (MSW):
 - Gonorrhea positive at pharynx- 3.1%
 - This represented 35% of all GC cases in MSW; 36% had negative genital GC testing


*Extragenital gonorrhea and chlamydia NAAT testing is not FDA approved but is widely validated in many academic and commercial labs

Gonorrhea and Chlamydia self-testing

TEST YOURSELF
The Visual Guide for a Self-collected Throat Swab



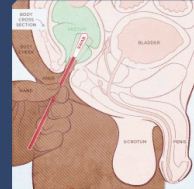
- 1 Wash your hands with soap and water.
- 2 Remove the transport tube and collection swab from packaging.
- 3 Label the transport tube with your Patient label.
- 4 Label the transport tube with the Throat label.
- 5 Open the package containing the collection swab.
- 6 Hold the collection swab far enough from the tip.




- 7 Say "AHH..." and reach the collection swab into your mouth to gently touch your throat.
- 8 Gently rub the swab tip on your throat side to side, up and down at least 5 times.

- 9 Unsnap the cap from the transport tube.
- 10 Place the collection swab into the transport tube, snapping it at dashed line.
- 11 Put the cap back on the transport tube and twist it closed to prevent leaks.
- 12 Put the transport tube into the biohazard bag.
- 13 Wash your hands with soap and water.

TEST YOURSELF
The Visual Guide for a Self-collected Rectal Swab



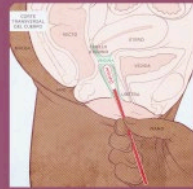
- 1 Wash your hands with soap and water.
- 2 Remove the transport tube and collection swab from packaging.
- 3 Label the transport tube with your Patient label.
- 4 Label the transport tube with the Rectal label.
- 5 Open the package containing the collection swab.
- 6 Firmly hold the collection swab above the dashed line closer to the swab tip.



- 7 Get into a comfortable position that allows you access to your anus. Putting your foot on the step stool may help.
- 8 Gently insert the swab 1 inch into the rectum and twist the swab in a circle at least 5 times.

- 9 Unsnap the cap from the transport tube.
- 10 Place the collection swab into the transport tube, snapping it at dashed line.
- 11 Put the cap back on the transport tube and twist it closed to prevent leaks.
- 12 Put the transport tube into the biohazard bag.
- 13 Wash your hands with soap and water.

HÁGASE LA PRUEBA
Guía visual de un hisopado vaginal realizado por usted mismo



- 1 Lávese las manos con agua y jabón.
- 2 Retire del envase el tubo conector y el hisopo para la muestra.
- 3 Etiquete el tubo conector con su etiqueta del Paciente.
- 4 Etiquete el tubo conector con la etiqueta Vaginal.
- 5 Abra el envase que contiene el hisopo para la muestra.
- 6 Coloque firmemente el hisopo para la muestra por encima de la línea discontinua (1 pulgada) de la parte del hisopo.



- 7 Colóquese en una posición cómoda, ya sea sentada o de pie con un pie sobre el taburete de inodoro o un taburete. Si tiene un tiempo inactivo, retírese ahora.
- 8 Inserte de manera suave el hisopo para la muestra en la vagina como si estuviera insertando un tampón, pero no tan profundo, y gire el hisopo de 5 a 20 segundos. Asegúrese de que el hisopo toque los lados de la vagina.
- 9 Está bien si hay alguna secreción o sangre en el hisopo.

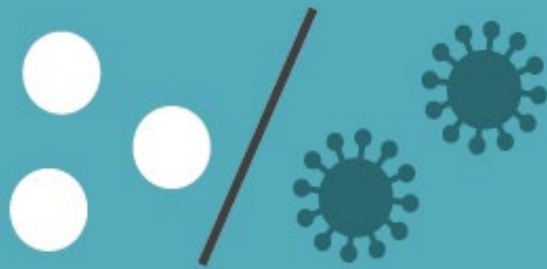
- 10 Desconecte la tapa del tubo conector.
- 11 Coloque el hisopo para la muestra en el tubo conector, asegurándose de que el hisopo no se deslice fuera del tubo. No detiene el hisopo ni permita que se seque el hisopo.
- 12 Mueva a taper el tubo conector en la bolsa con un giro para evitar fugas.
- 13 Coloque el tubo conector en la bolsa para desechos biohazard.
- 14 Lávese las manos con agua y jabón.

Available in English & Spanish through the Johns Hopkins HIV/STD Prevention & Training Center

PrEP Basics

PrEP stands for
Pre-Exposure Prophylaxis

The word “prophylaxis” means to prevent or control the spread of an infection or disease



PrEP can help prevent you from getting HIV if you are exposed to the virus

PrEP is an HIV prevention option that works by taking
one pill every day



HIV Pre-exposure prophylaxis (PrEP)

- Tenofovir DF/emtricitabine (Truvada)
- Highly effective in many populations
 - Heterosexual men and women
 - Men who have sex with men
 - People who inject drugs
- Gilead drug assistance programs & local initiatives for low-cost/ free medication



Post-Exposure Prophylaxis: Non-Occupational (nPEP)

P



PEP involves taking anti-HIV drugs as soon as possible after having been exposed.

E



To be effective, PEP must begin within 72 hours of exposure, before the virus has time to rapidly replicate in your body.

P



PEP consists of 2-3 antiretroviral medications taken for 28 days.

Undetectable = Untransmittable



- Individuals with HIV who receive antiretroviral therapy (ART) and have achieved and maintained an undetectable viral load cannot sexually transmit the virus to others
- For those sharing injection equipment, risk is unknown but likely reduced risk

Cohen MS et al., N Engl J Med, 2016;375.
Rodger AJ et al. JAMA 2016;316.
Bavinton BR et al. Lancet 2018

<https://www.cdc.gov/hiv/risk/art/index.html>

Initiatives in Pennsylvania

Pennsylvania Department of Health STD Initiatives: STD prevention planning and intervention of disease transmission

- STD Clinics
- Expanded STD Testing – 3 Tiers of testing support
- Private Provider Technical Support
- STD /HIV Field Staff- Disease Intervention Specialist
- Tracking Reported STD morbidity and trends
- CDC STD Testing and Treatment Guideline Adherence
- STD Education

Pennsylvania Department of Health- Health Advisory Historic Increase In Reported Congenital Syphilis

In response to the recent increase in both Congenital Syphilis and reported Early Syphilis in women of child bearing age, PADOH is recommending that all pregnant women be offered a syphilis test at the following intervals:

- At the first prenatal visit
- At the third trimester of pregnancy
- At the delivery of a child, or
- At the delivery of a stillborn child

6 Confirmed
Congenital
Syphilis Cases in
2018

Highest Rates of
Syphilis in 20
Years

Your Baby's Health Begins with You

Syphilis is a serious sexually transmitted disease that can affect your pregnancy and your baby's health.

If untreated, you can unknowingly pass the infection on to your baby.

If you are pregnant:

- Obtain routine prenatal care
- Expect a test for syphilis at the first prenatal visit
- Talk openly with your doctor
- Discuss the possibility of additional syphilis testing during the 27th week of pregnancy and at your delivery

If you test positive for syphilis, your doctor should discuss treatment and care options with you.

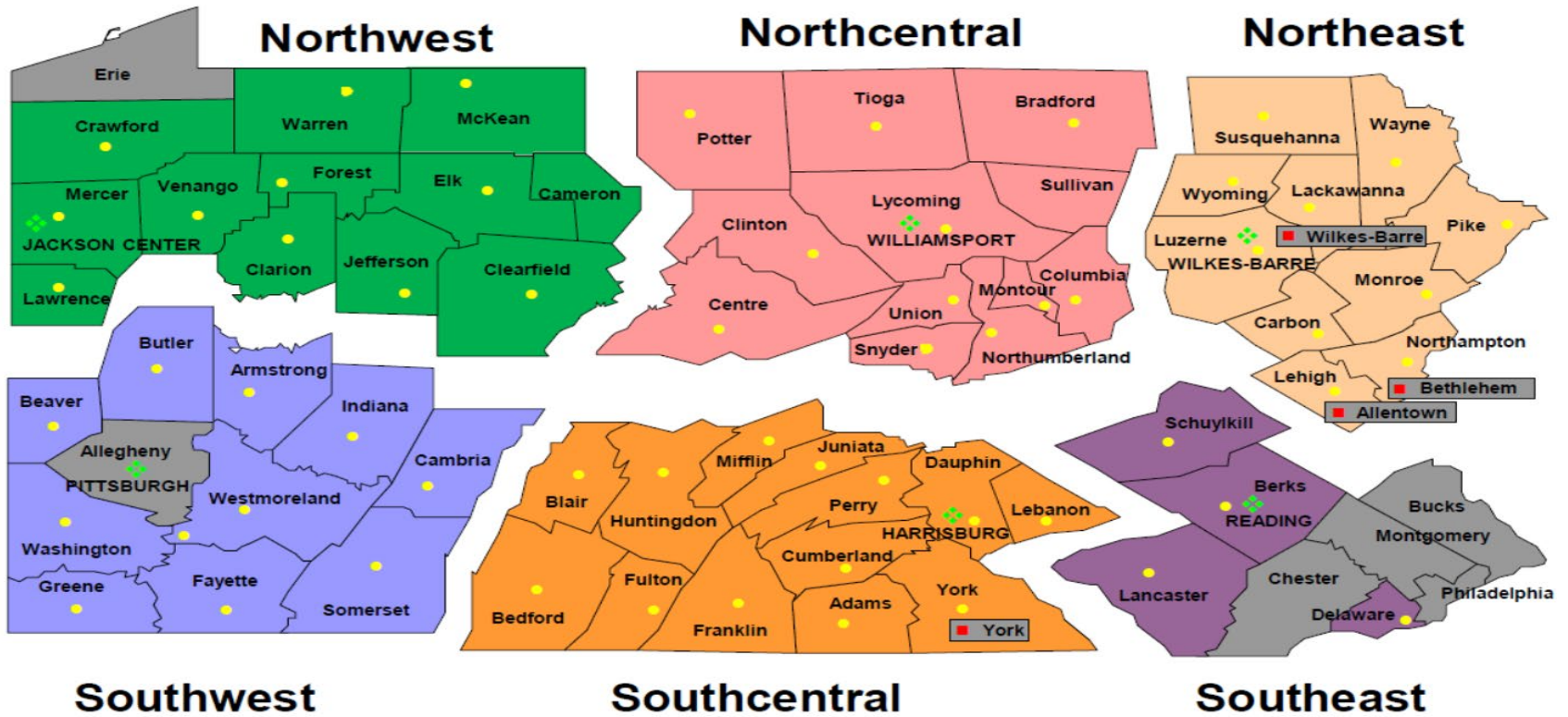
47% Increase in
Early Syphilis in
Women ages
15-44

Treat with
Benzathine
penicillin G

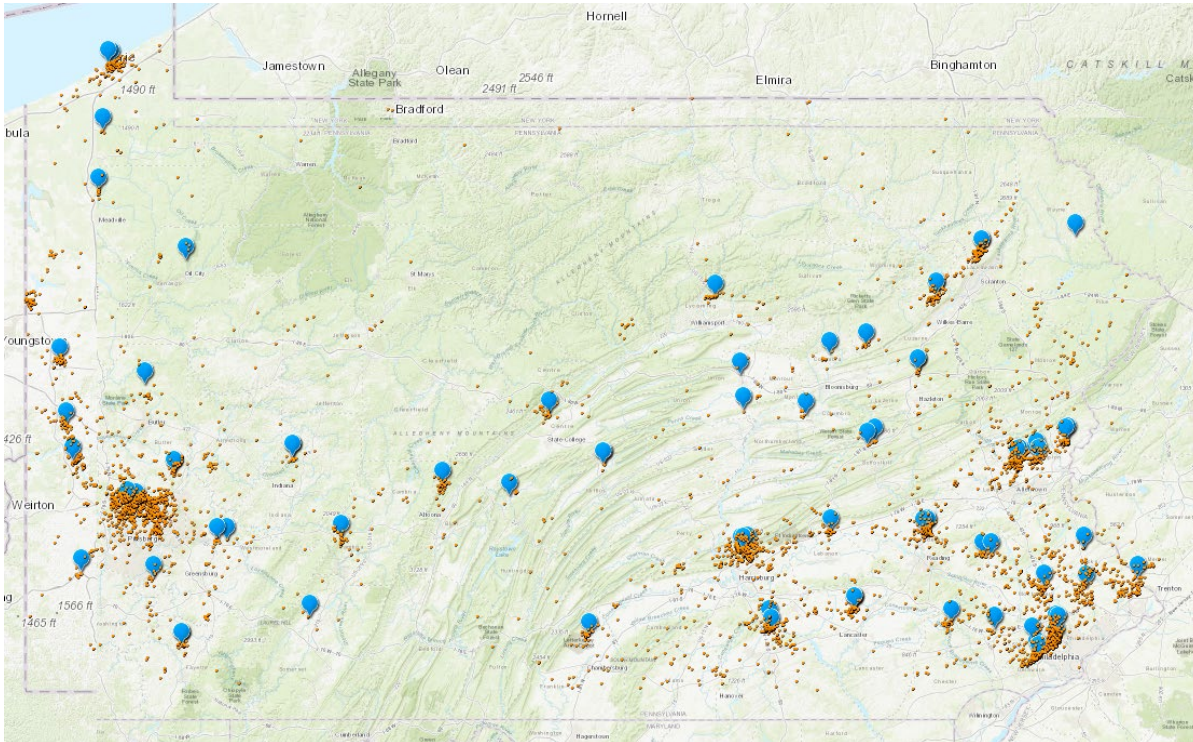
Pennsylvania Department of Health Community Health Districts

County Health Departments
Municipal Health Departments

District Offices
State Health Centers



2017 Reported Gonorrhea and 2018 Pennsylvania STD Clinics



Full listing of Free and Confidential STD/HIV Testing and Treatment Clinics available at:
www.health.state.pa.us/std

PA District STD Resources

Northcentral District, Williamsport

Water Tower Square
1000 Commerce Park Drive, Suite 109
Williamsport, PA 17701
Phone: 570-327-3400 **Fax:** 570-327-3748

Northeast District, Wilkes-Barre

665 Carey Avenue – Suite 5
Wilkes-Barre, PA 18706
Phone: 570-826-2062 **Fax:** 570-826-2238

Northwest District, Jackson Center

19 McQuiston Drive
Jackson Center, PA 16133
Phone: 724-662-6068 **Fax:** 724-662-6086

Southcentral District

30 Kline Plaza
Harrisburg, PA 17104
Phone: 717-787-8092 **Fax:** 717-772-3151

Southeast District

625 Cherry Street
Reading, PA 19602
Phone: 610-378-4352 **Fax:** 610-378-4527

Southwest District

233 W. Otterman Street
Greensburg, PA 15601
Phone: 724-830-2701 **Fax:** 724-832-5327

State Health Centers

Delaware County State Health Center

151 West 5th Street, Suite 1
Chester, PA 19013
Phone: 610-447-3250 **Fax:** 610-447-3008

Lancaster County State Health Center

1661 Old Philadelphia Pike
Lancaster, PA 17602
Phone: 717-299-7597 **Fax:** 717-396-7197

York County State Health Center

1750 N. George St
York, PA 17404
Phone: 717-771-4505 **Fax:** 717-854-0784

Pennsylvania Department of Health Sexually Transmitted Diseases (STD)

Kris King STD Program Administrator
717.5476.3440
krisking@pa.gov

Steve Kowalewski CDC Sr Public Health Adv
717.547.3443
c-skowalew@pa.gov

Visit

www.health.state.pa.us/std

If you are not routinely getting PA Health Alerts, please consider registering at:
<https://www.health.pa.gov/topics/prep/PA-HAN/Pages/HAN.aspx>

Resources

STD Treatment Guidelines Resources

STD Treatment Guidelines Mobile App

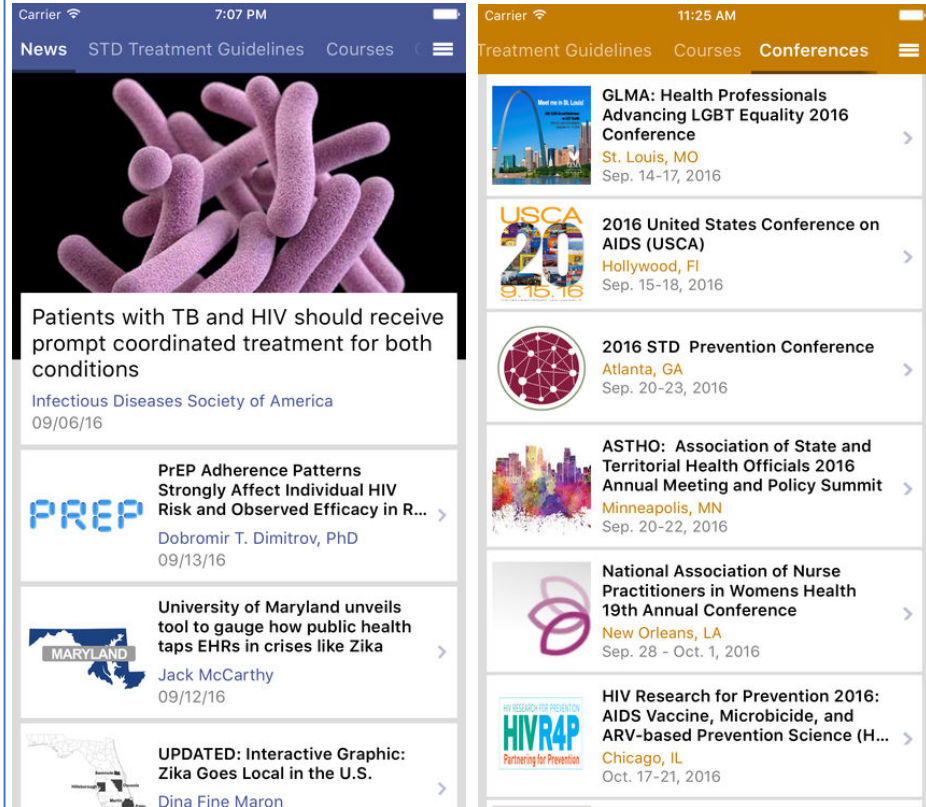
Designed and Developed by CDC

Fast Access to Conditions



Available at: <https://itunes.apple.com/us/app/std-tx-guide/id655206856?mt=8>

STD Clinical Toolbox Mobile App



Available at: <https://appadvice.com/app/std-clinical-toolbox-for-iphone/1128491831>



Wall charts, pocket guides, and the full MMWR article at: <https://www.cdc.gov/std/tg2015/>

National STD Curriculum

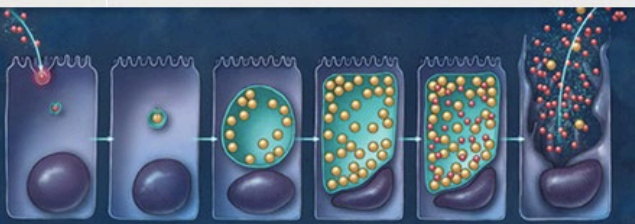
<http://std.uw.edu>

National STD Curriculum Sign In








[CE STD Modules Self-Study](#) > [STD Modules Content View](#) > [Question Bank](#) [Master Bibliography](#) Q

National STD Curriculum

Funded by a grant from the Centers for Disease Control and Prevention



STD Modules

	Chlamydia	Chlamydia Self-Study CNE/CME Tracking progress and receiving CE credit	Content View > Quick viewing of Chlamydia STD Module	Question Bank > Interactive board-review style questions
	Gonorrhea	Gonorrhea Self-Study CNE/CME Tracking progress and receiving CE credit	Content View > Quick viewing of Gonorrhea STD Module	Question Bank > Interactive board-review style questions
	HSV Herpes Simplex Virus (HSV)	HSV Self-Study CNE/CME Tracking progress and receiving CE credit	Content View > Quick viewing of HSV STD Module	Question Bank > Interactive board-review style questions
	HPV Human Papillomavirus (HPV)	HPV Self-Study CNE/CME Tracking progress and receiving CE credit	Content View > Quick viewing of HPV STD Module	
	PID Pelvic Inflammatory Disease (PID)	PID Self-Study CNE/CME Tracking progress and receiving CE credit	Content View > Quick viewing of PID STD Module	
	Syphilis	Syphilis Self-Study CNE/CME Tracking progress and receiving CE credit	Content View > Quick viewing of Syphilis STD Module	
	Vaginitis	Vaginitis Self-Study CNE/CME Tracking progress and receiving CE credit	Content View > Quick viewing of Vaginitis STD Module	

Additional Resources for Clinicians

CDC 2015 STD Treatment Guidelines

- www.cdc.gov/std/tg2015

National Network of STD Clinical Prevention Training Centers (NNPTC)

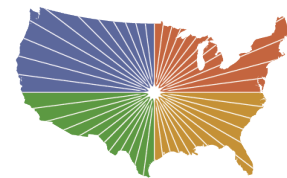
- www.nnptc.org

NNPTC STD Clinical Consultation Network

- www.stdccn.org

CDC Division of STD Prevention

- www.cdc.gov/std/training



National Network of
STD Clinical Prevention
Training Centers

Thank you!
Questions?