

# The Intersection of Overdose, Opiate Use Disorder, and Infectious Disease Transmission in Pennsylvania 2017

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This is the public  
health crisis of our  
generation.

# Sentinel Events

- 400% increase in HCV in 4 States 2013
- HIV/HCV Outbreak in Indiana 2014
- Overdose deaths 2015
- Tripling of heroin users since 2008
  - ▣ 150,000 to almost ½ a million 2016
  - ▣ Many estimates are ¾-1 million in 2017

# Changes in Cause of Deaths

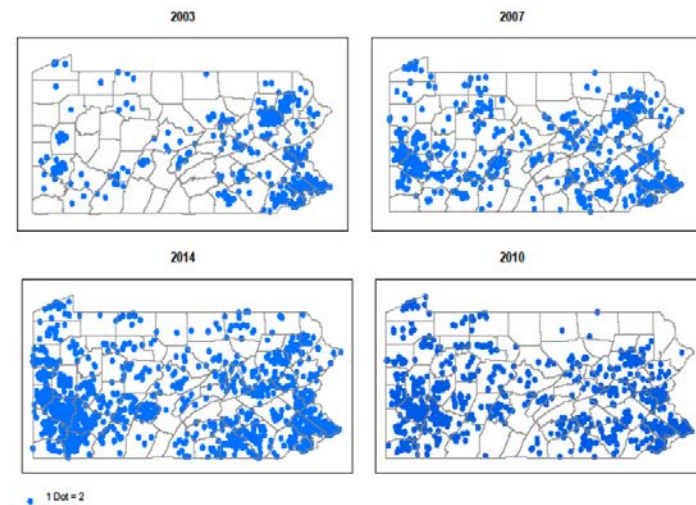
Cause of Death	1990 Deaths	2015 Deaths	Change
Car accidents	44,600	37,757	Decrease
Guns	36,943	35,763	Decrease
HIV	27,256	6,465	Decrease
Drug overdoses	8,413	52,404	Increase >500%

Source: The Epidemiology Monitor, June 2017, volume 38, number 6.

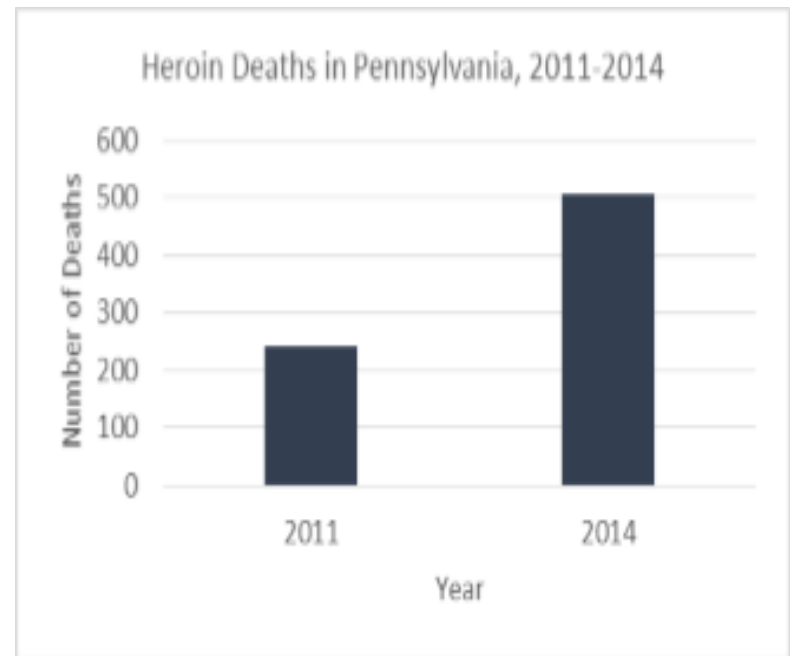
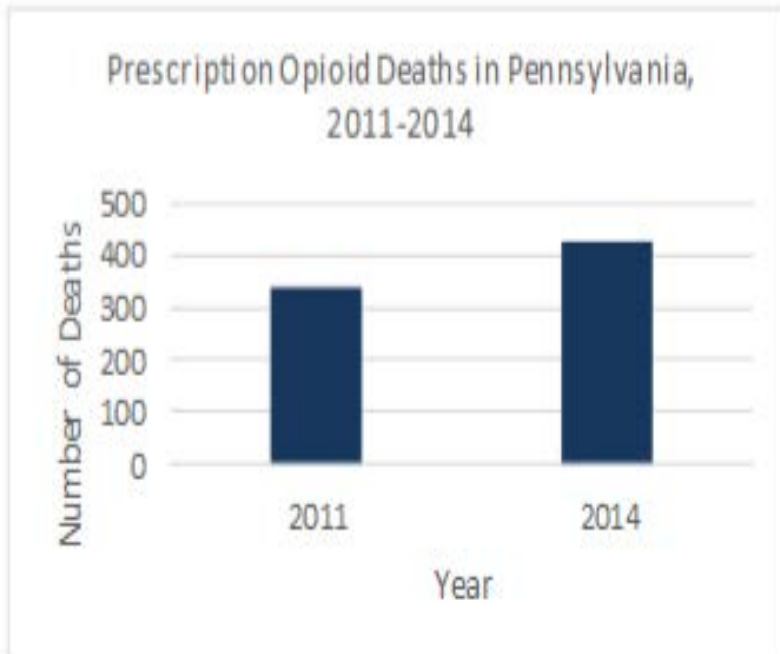
# The Epidemics

- **Everyday** in the Commonwealth:
  - 13 people die of overdose
  - >17 young adults contract HCV
  - Women infected with HCV, who do not know their status, are giving birth

HCV Reported Cases in 15-35 Years old Age Group by County (excluding Philadelphia) , Dot Density Study, Pennsylvania, Selected Years.

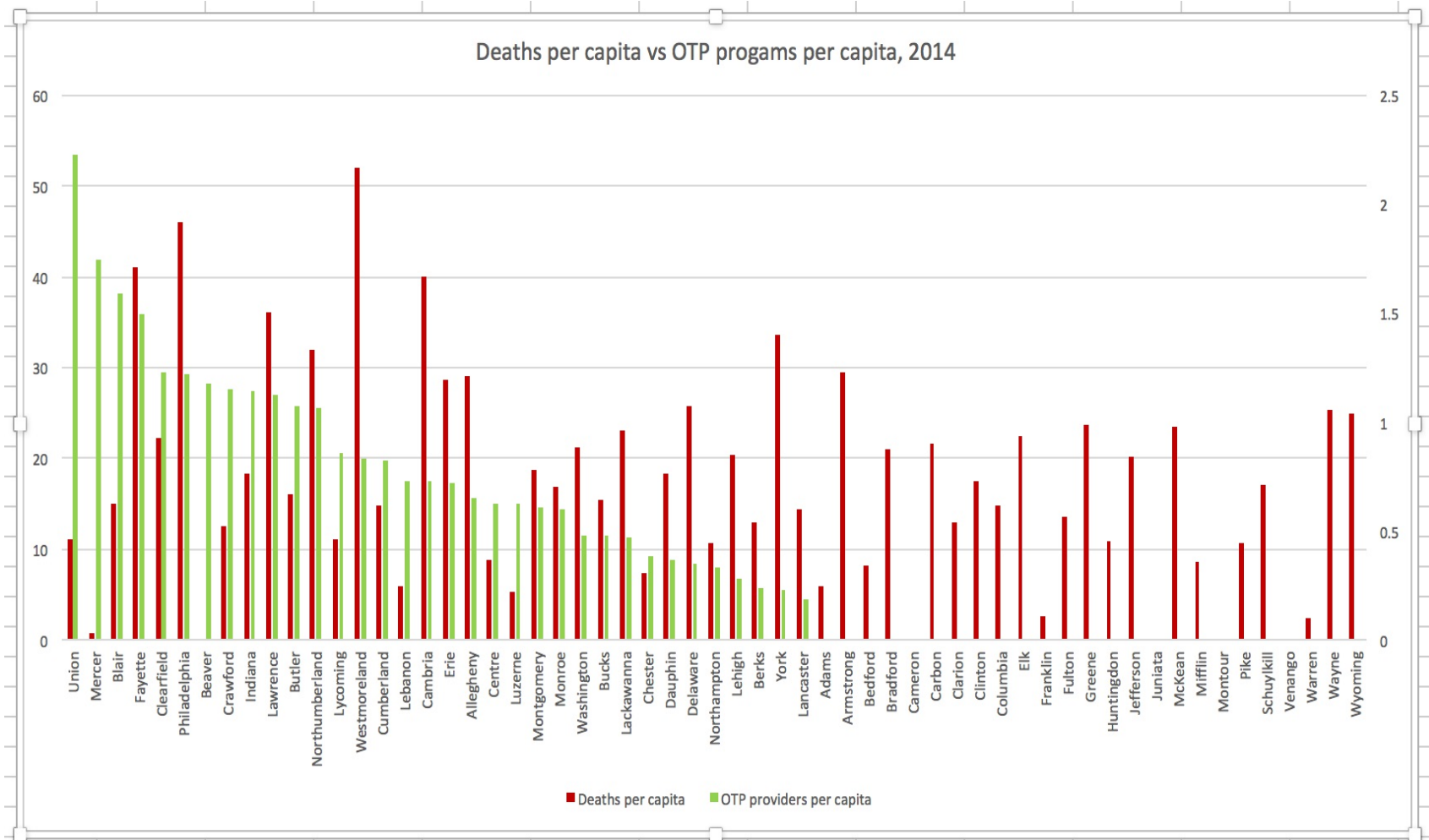


# Overdose



# Overdose

Deaths per capita vs OTP programs per capita, 2014



# 190 people in this Indiana town were diagnosed with HIV April 10, 2016

- “Now, a year later, the outbreak is at 190 cases. But the sickness runs deeper. Poverty envelops this city. Empty storefronts dot the main street. Many homes are boarded up or have makeshift tarps instead of windows. Fewer than 10% of Austin's residents have earned a college degree. One out of five residents lives below the poverty level, more than 1.5 times the rate in Indiana. **Drug use here is still rampant.**”



## 190 people in this Indiana town were diagnosed with HIV April 10, 2016

- “Some users shoot up alongside their children or even their children’s children. In the winter, as many as 20 users may huddle in a home, gathering in the one building that has heat for the day.”

# More Consequences

- Children in foster care in Pennsylvania increased 14% in three years
  - Nearly 16,000 at the end of 2015,
- In 2014, parental substance abuse was a factor in >56% of the cases where infants removed from homes<sup>1</sup>
- From 2010 to 2014, 7,500 babies born with drug dependencies they received in utero<sup>2</sup>
  - Tip-of-the-iceberg numbers
  - Do not account for newborns whose mothers had private insurance (6 in 10)

<sup>1</sup>Center for Children's Justice, a nonprofit in Berks County

<sup>2</sup> Pennsylvania Medicaid Statistics



# More Consequences

- 2691 babies required NICU stays in 2015 (788 required NICU stays in 2000)
  - ▣ 60% of the babies required morphine or methadone to get through withdrawal
- 4615 maternal hospital stays related to substance abuse 2015
  - ▣ 52% related to heroin
- Average length of stay for addicted babies is 25 days

Source: PHC4

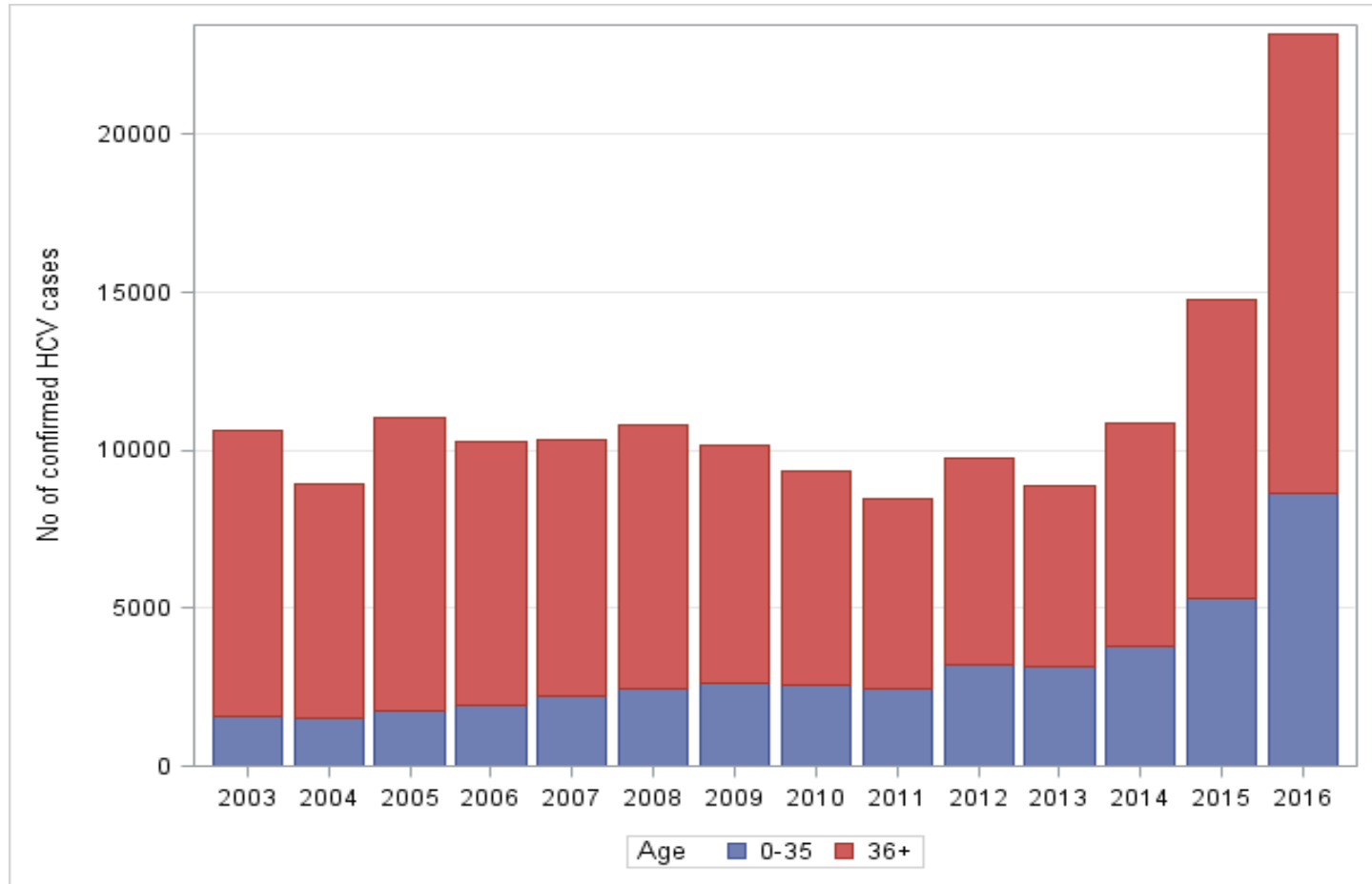
# More Consequences

- 6 newborns will contract HCV for every 100 positive mothers<sup>1</sup>
- Low transmission rates compared to hepatitis B or HIV, hospitals aren't testing high-risk babies
- 8,119 diagnosed HCV+ women in Philadelphia from 2011-2013<sup>2</sup>
  - 500 had at least one baby,
  - 537 total children born from 2011-2013
  - Only 84 at-risk children tested for HCV
  - 4 positives cases confirmed
  - 24 other cases of the virus are expected to develop from newborns not screened
- But without testing, many will remain unaware of the condition and will not seek treatment until later in life.

<sup>1</sup>Centers for Disease Control and Prevention (CDC)

<sup>2</sup> Philadelphia Hepatitis Registry

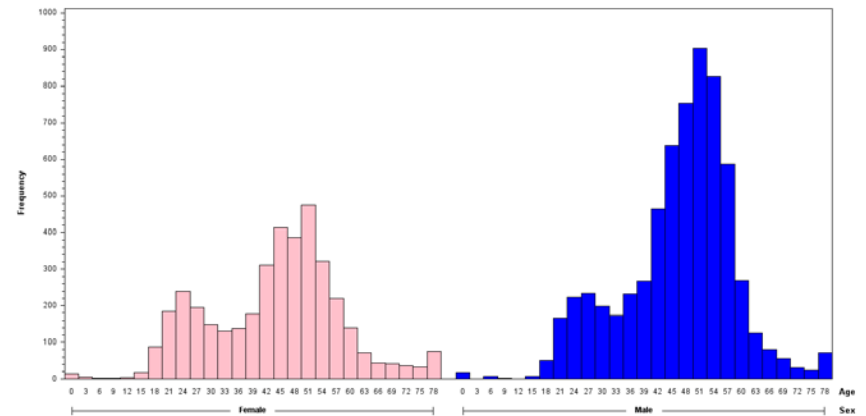
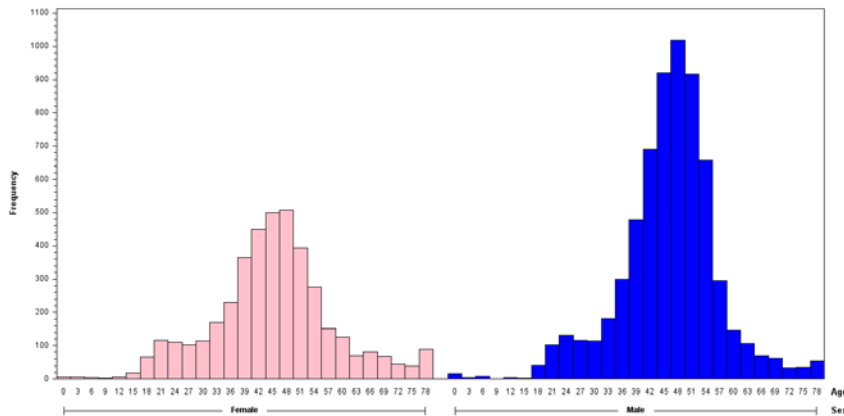
# PA-NEDSS Reported HCV Past and Present by Age Group



# Changes in Demographics PA

2003

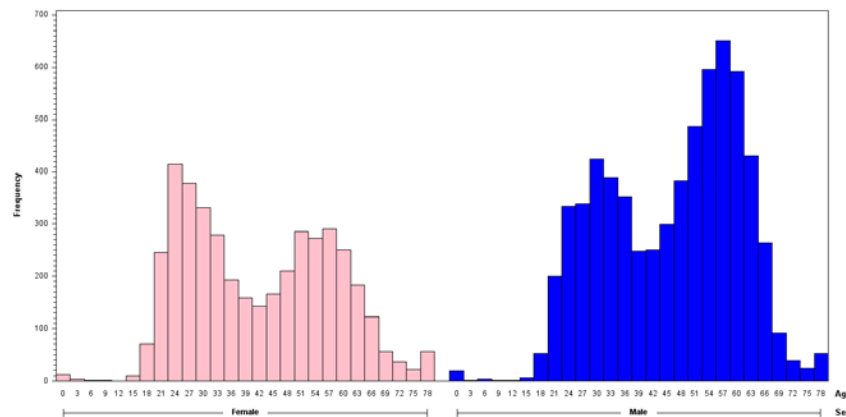
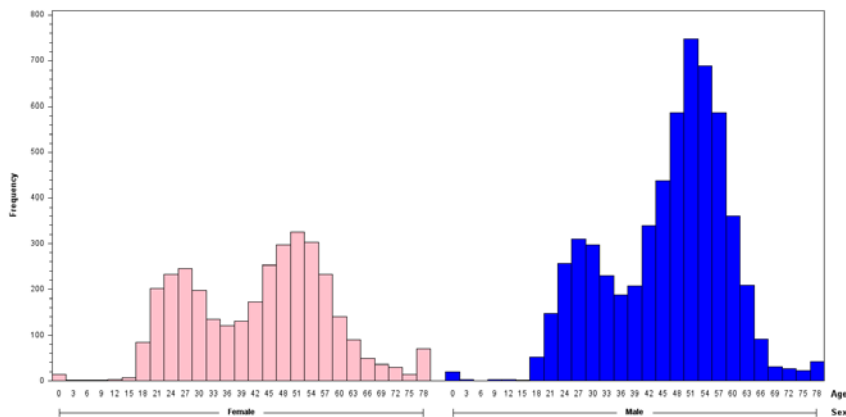
2007



# Changes in Demographics PA

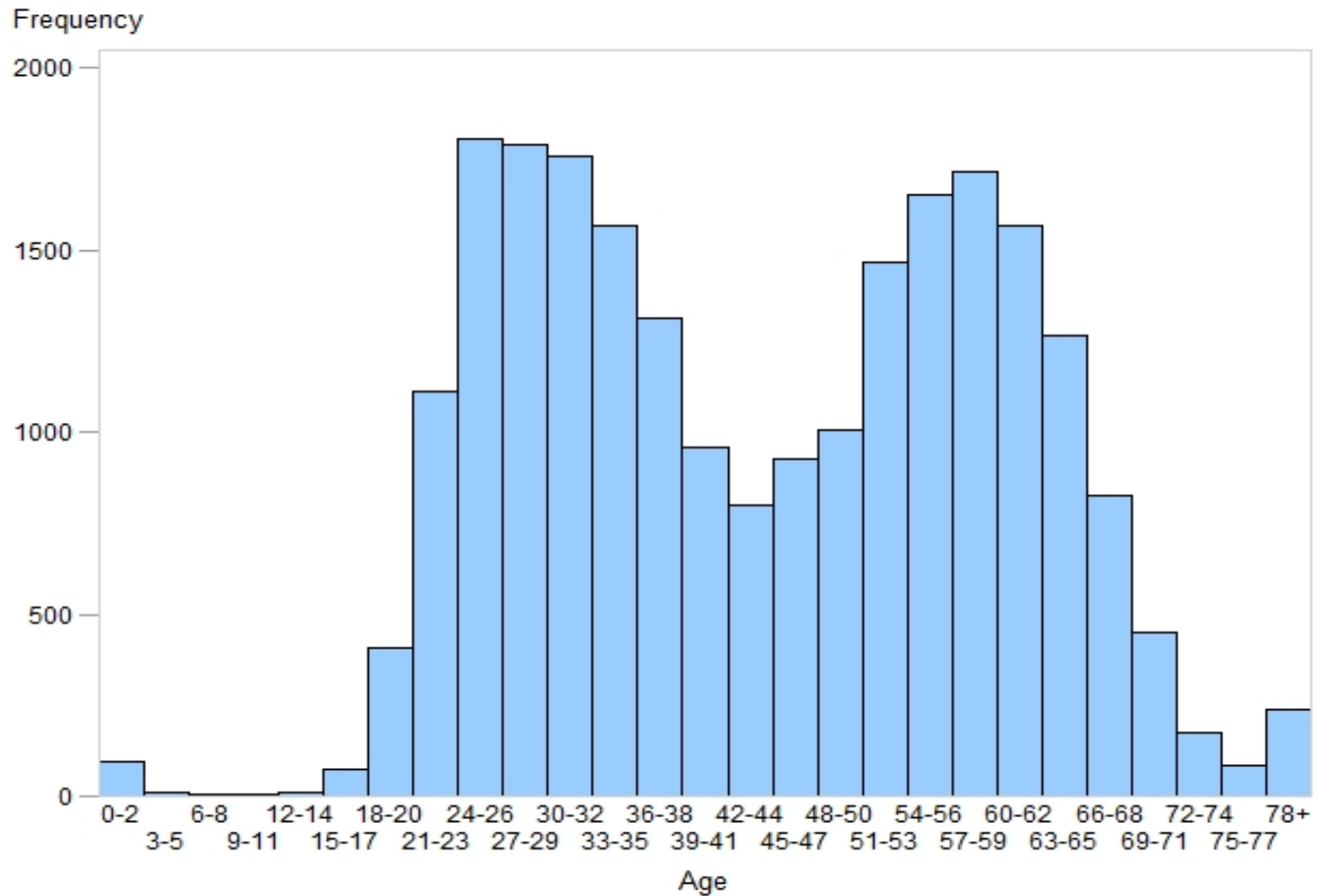
2010

2014



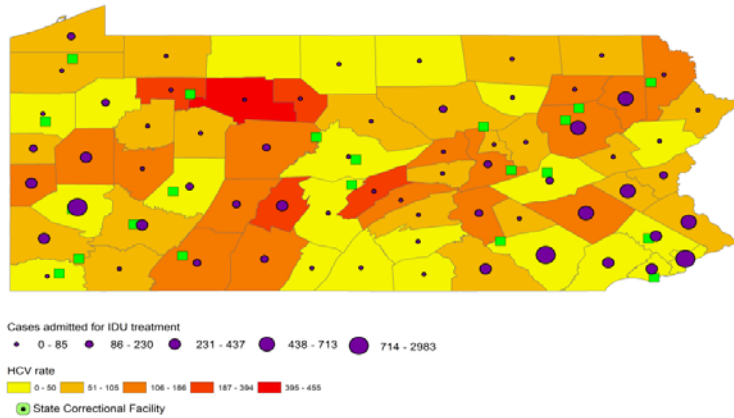


# Changes in HCV Demographics PA 2016

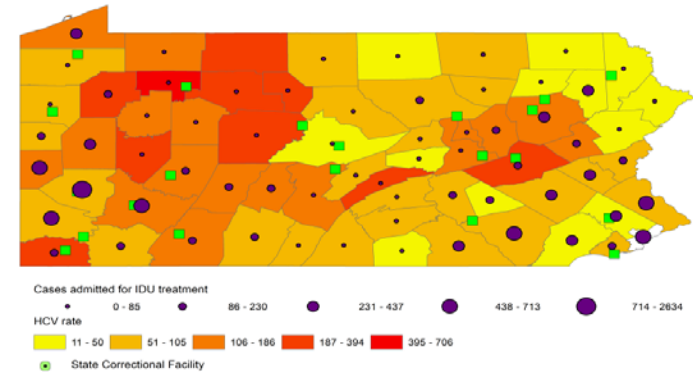


# GIS Mapping of HCV Age-Specific per 100,000 for the 15-35 year old demographic

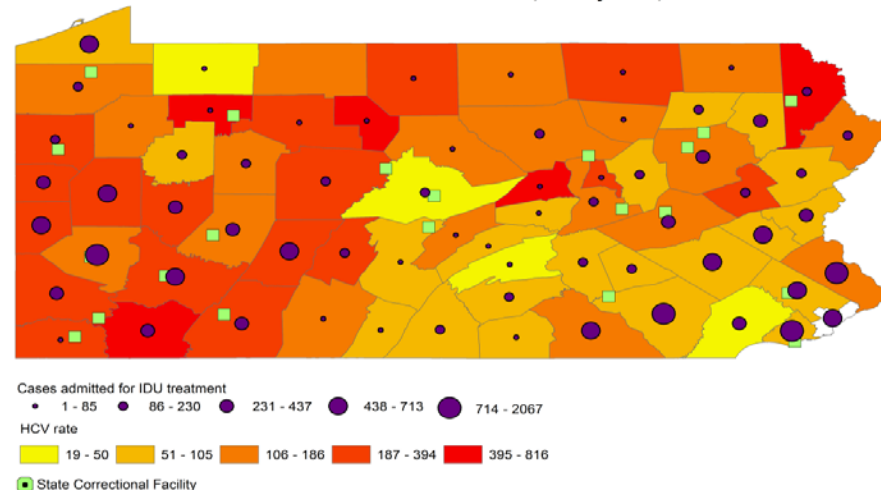
**Figure 6: HCV age specific reporting rate per 100,000 for 15-35 YO population with Graduated Dot Analysis of cases of IVDU admitted for treatment (all age groups) by County and locations of State Correctional facilities, Pennsylvania, 2007**



**Figure 7: HCV age specific reporting rate per 100,000 for 15-35 YO population with Graduated Dot Analysis of cases of IVDU admitted for treatment (all age groups) by County and locations of State Correctional facilities, Pennsylvania, 2010**

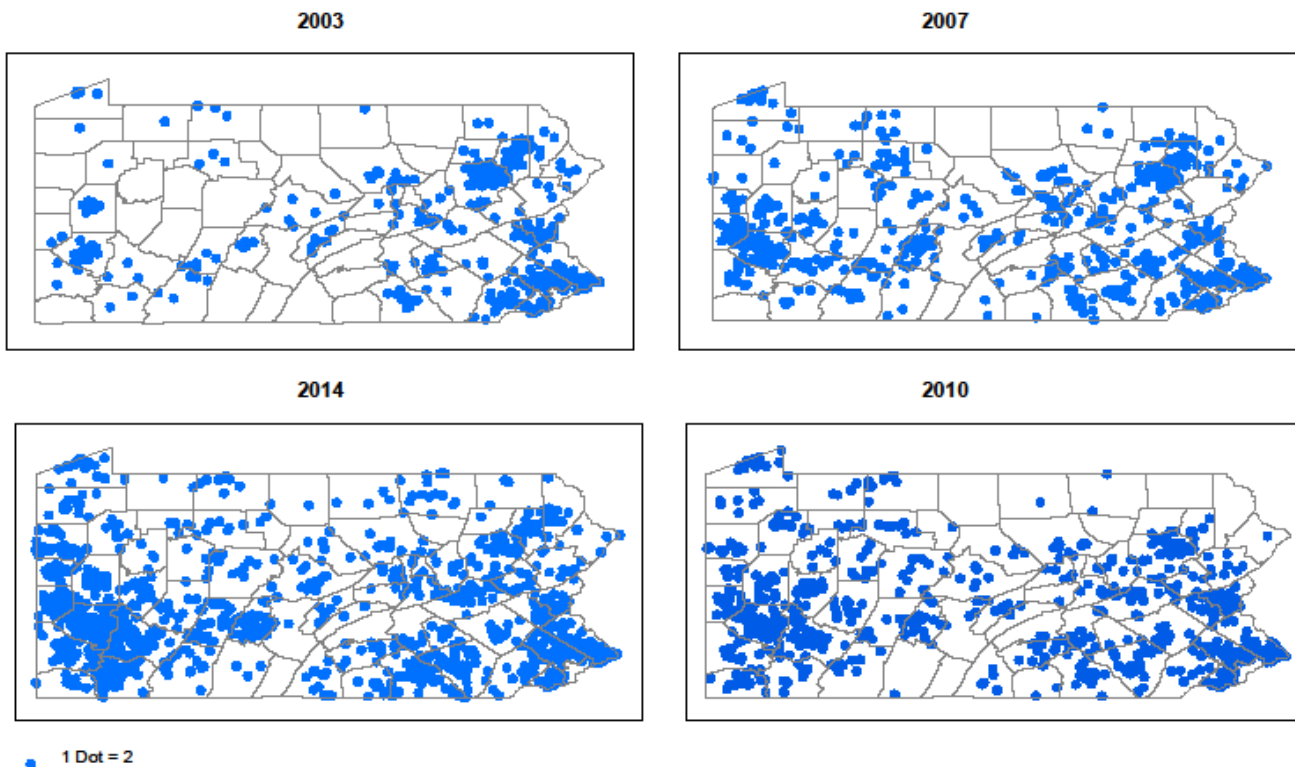


**Figure 8: HCV age specific reporting rate per 100,000 for 15-35 YO population with Graduated Dot Analysis of cases of IVDU admitted for treatment (all age groups) by County and locations of State Correctional facilities, Pennsylvania, 2014**



# HCV in Young Adults in Pennsylvania 2003-2015

HCV Reported Cases in 15-35 Years old Age Group by County (excluding Philadelphia) , Dot Density Study, Pennsylvania, Selected Years.



# Necessary but not sufficient....

- Drug Treatment with MAT
  - ▣ Methadone
  - ▣ Suboxone
- Harm Reduction
  - ▣ Syringe/works exchange
  - ▣ Naloxone
- Hepatitis treatment
  - ▣ Reduce the viral load of the using community
  - ▣ Immunization

# Framework of a model HCV control strategy for PWID

## Prevent new infections

### HCV prevention activities

- Access to syringes & other equipment
- OST
- Safe injection education
- Outreach to those not engaged

## Detect and care for existing infections

### Screening and diagnosis

- Antibody screening
- RNA test to confirm
- Clinical evaluation to determine disease stage
- Monitoring disease progression
- Reduce alcohol use

## Reduce chronic infections

### HCV care and treatment

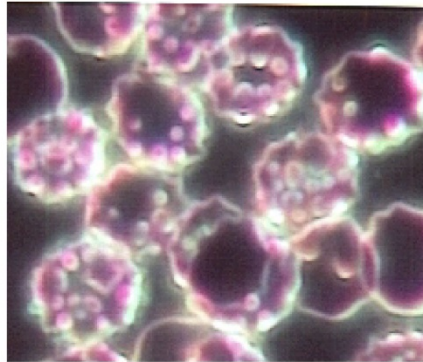
- Treat to cure infection
- Support adherence to treatment
- Support post-cure to prevent reinfection

**Co-locating these services increases their impact on HCV control**

# General STD Overview



Gonorrhea



Chlamydia



Syphilis

Contact Information: Pennsylvania STD Program,

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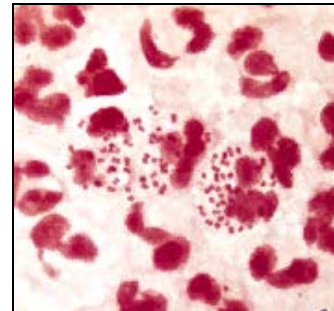
[c-skowalew@pa.gov](mailto:c-skowalew@pa.gov)

### **National Perspective:**

- More than 9 million cases of STDs occur each year in young people aged 15-24
- Half of all American youth will contract an STD by age 25
- Rates of chlamydia and gonorrhea are higher in females aged 15-19 than in any other group
- Lifetime medical costs associated with STDs in young people are estimated to be at least \$6.5 billion

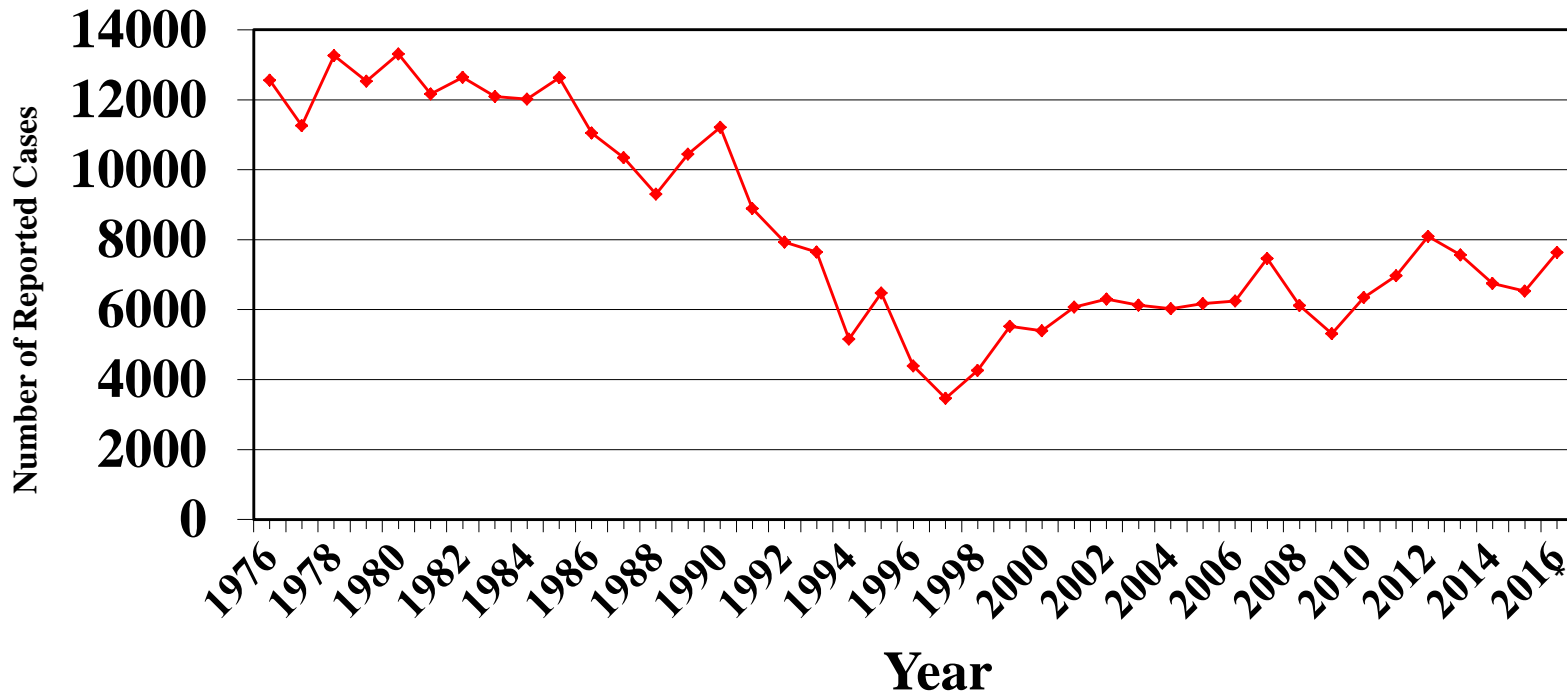
## National Perspective:

- Second most common bacterial STD
- Estimated >1 million US cases per year
- Incidence highest among adolescents and young adults
- Causes a range of clinical syndromes
- Many infections are asymptomatic



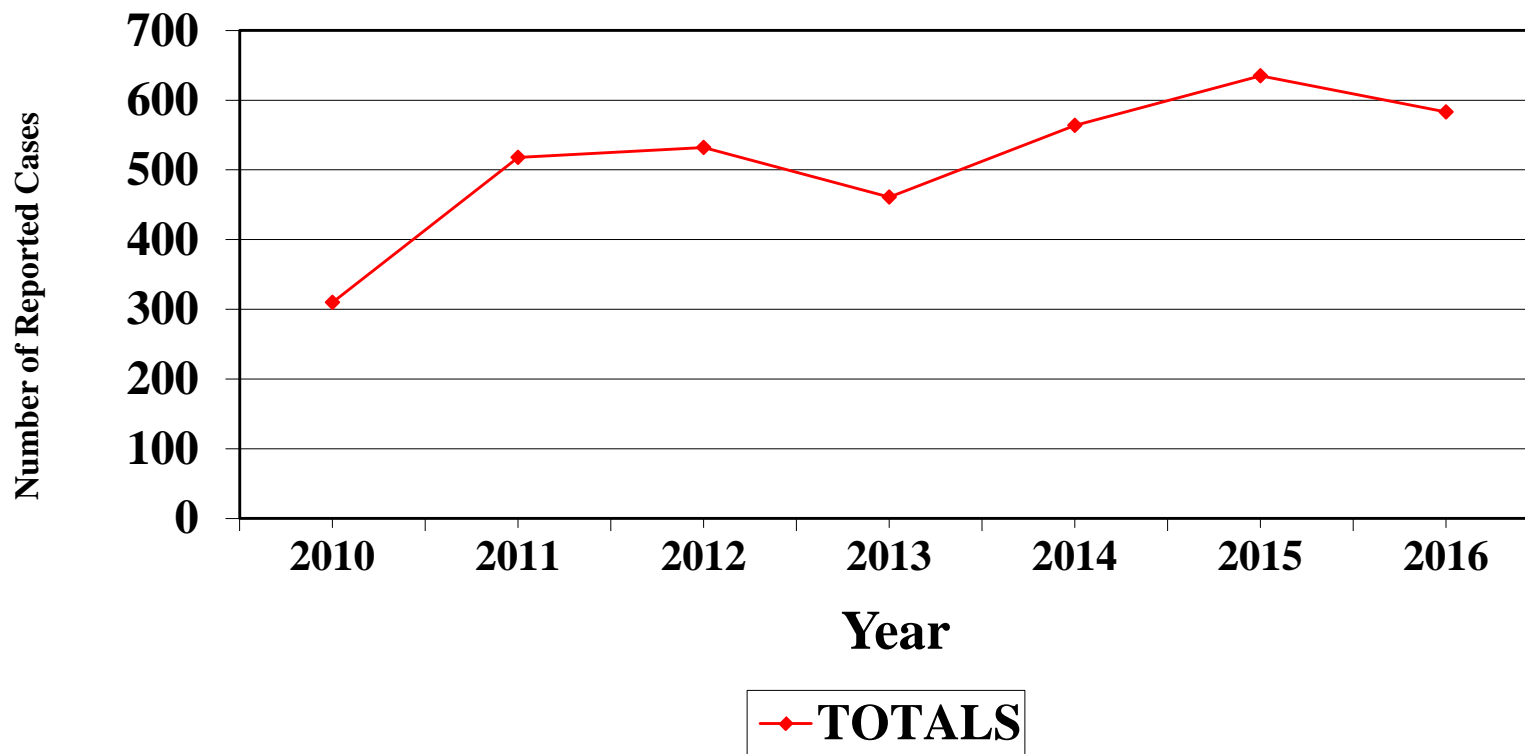


# Reported Gonorrhea Pennsylvania 1976-2016



(Pennsylvania Exclusive of Philadelphia)

# Reported Gonorrhea NW District 2010-2016

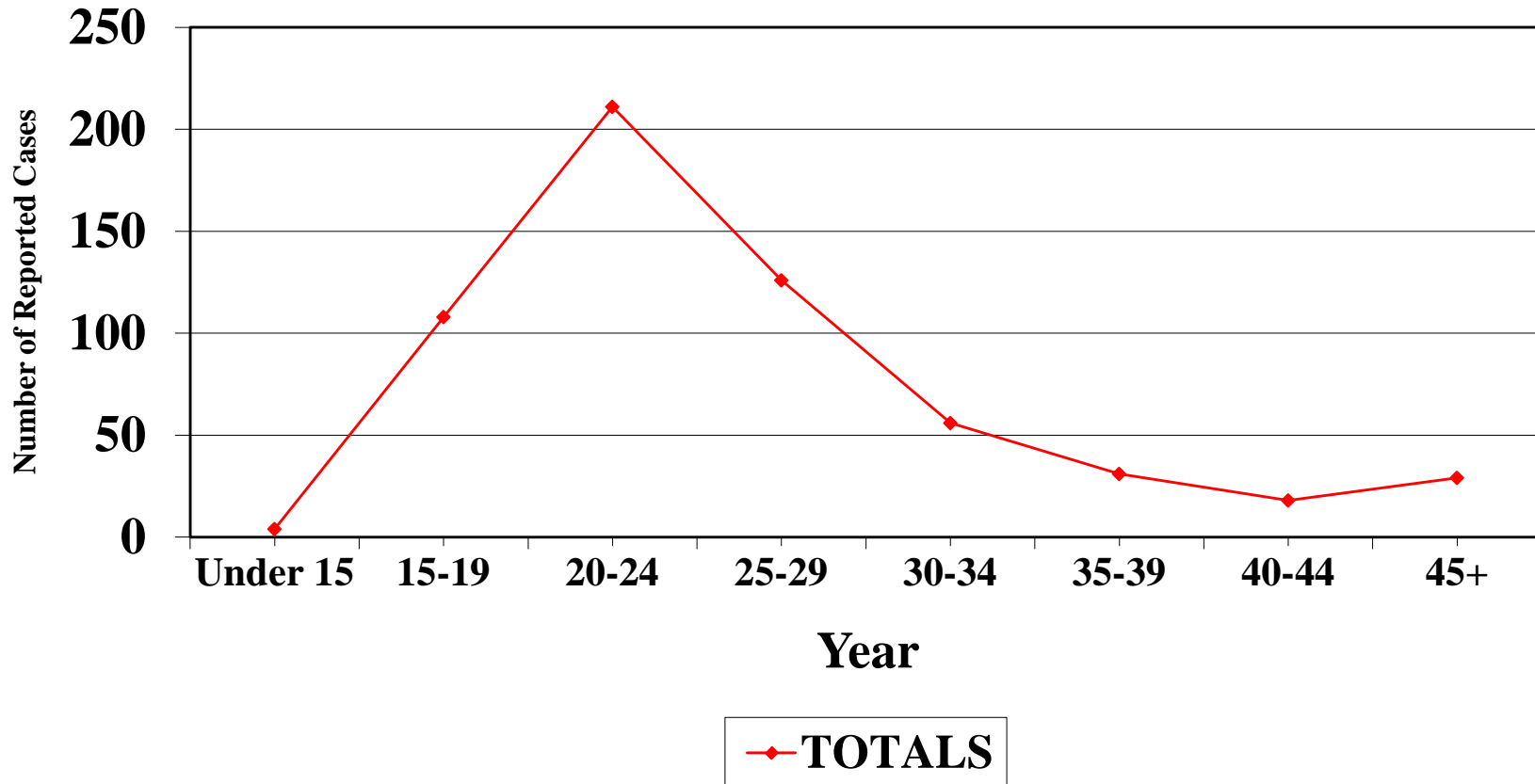


## Reported Gonorrhea NW District 2015/2016



Reported Gonorrhea				
County	2015	2015 Percent of Total	2016	2015 Percent of Total
Clarion	7	1.10%	8	1.37%
Clearfield	8	1.26%	1	0.17%
Crawford	23	3.62%	33	5.66%
Elk	3	0.47%	4	0.69%
Erie	458	72.13%	298	51.11%
Forest	3	0.47%	1	0.17%
Jefferson	2	0.31%	3	0.51%
Lawrence	35	5.51%	92	15.78%
Mckean	7	1.10%	18	3.09%
Mercer	70	11.02%	103	17.67%
Venango	14	2.20%	11	1.89%
Warren	5	0.79%	11	1.89%
<b>Total</b>	<b>635</b>	<b>100%</b>	<b>583</b>	<b>100%</b>

# Reported Gonorrhea by Age NW District 2016



## National Perspective:

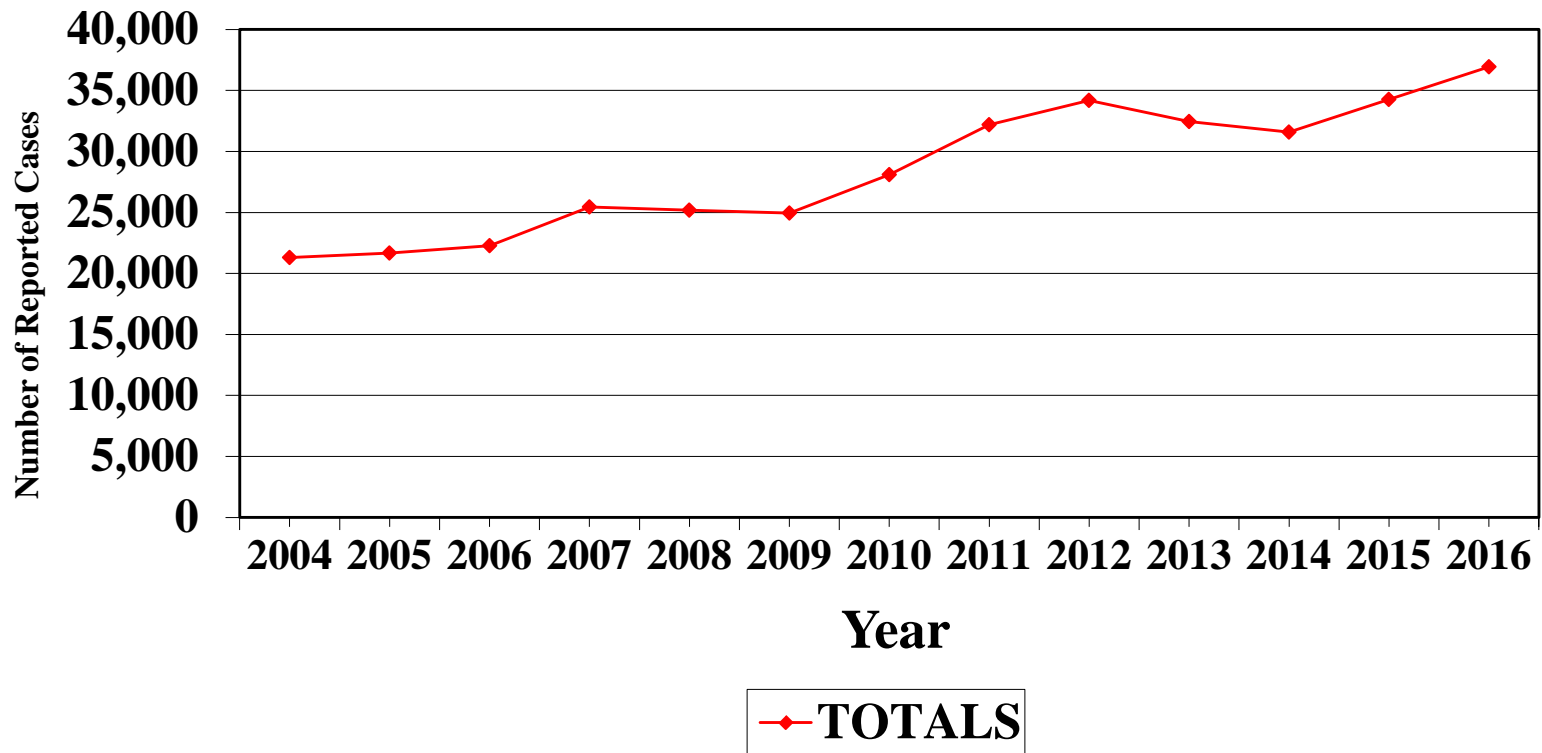
- Chlamydia is the most frequently reported bacterial sexually transmitted disease in the United States and Pennsylvania.
- Three million American women and men become infected with chlamydia every year

## Chlamydia

- Four times as common as gonorrhea
- More than 30 times as common as syphilis
- Most common among women and men under 25

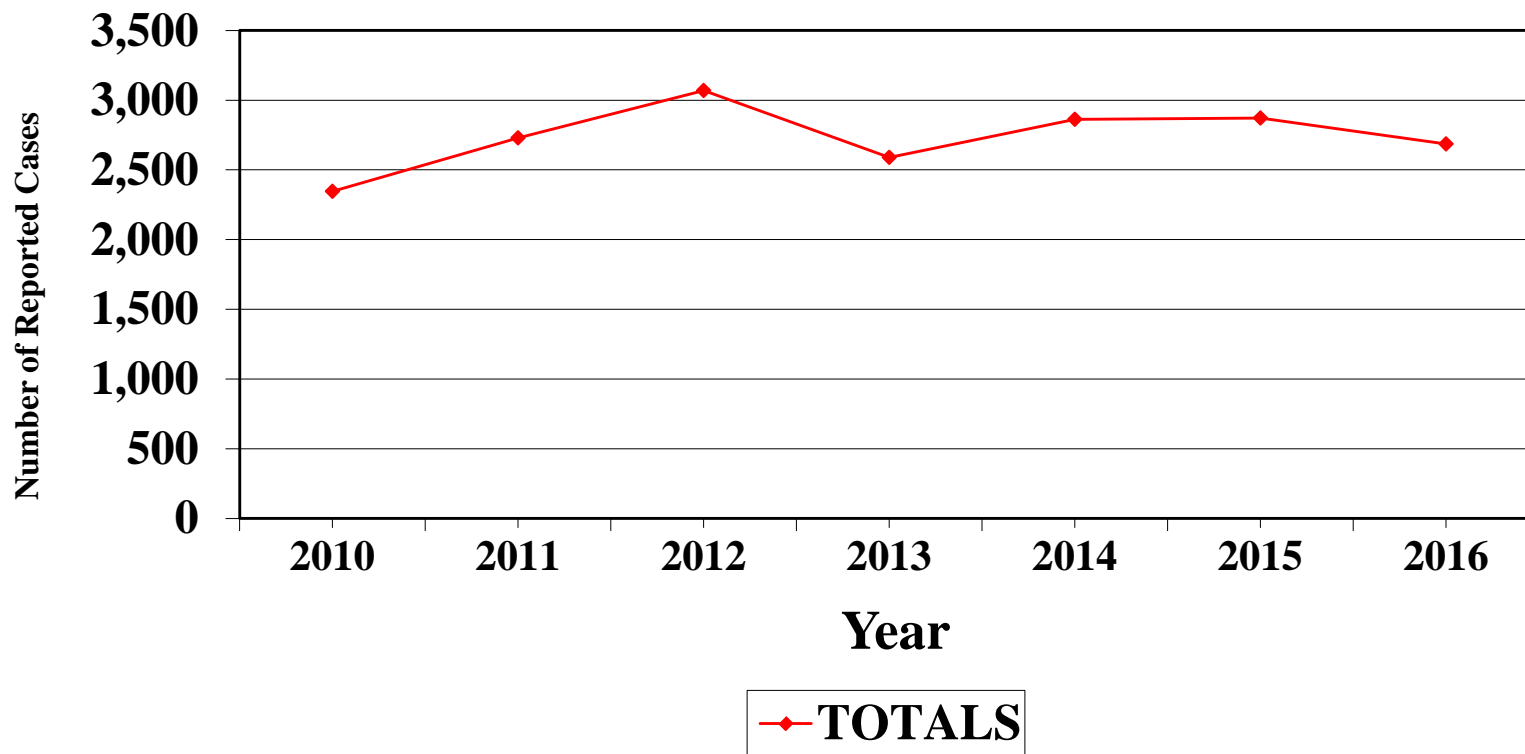
- Chlamydia is known as a "silent" disease because about three quarters of infected women and about half of infected men have no symptoms.
- If symptoms do occur, they usually appear within 1 to 3 weeks after exposure.
- Significant health consequences
  - Most common cause of preventable infertility
  - Facilitates sexual transmission of HIV
- New testing technology have increased opportunities to identify infections
  - Urine tests & single dose treatment easier to reach, treat & cure at-risk populations

# Reported Chlamydia Pennsylvania 2004-2016



(Pennsylvania Exclusive of Philadelphia)

# Reported Chlamydia NW District 2010-2016



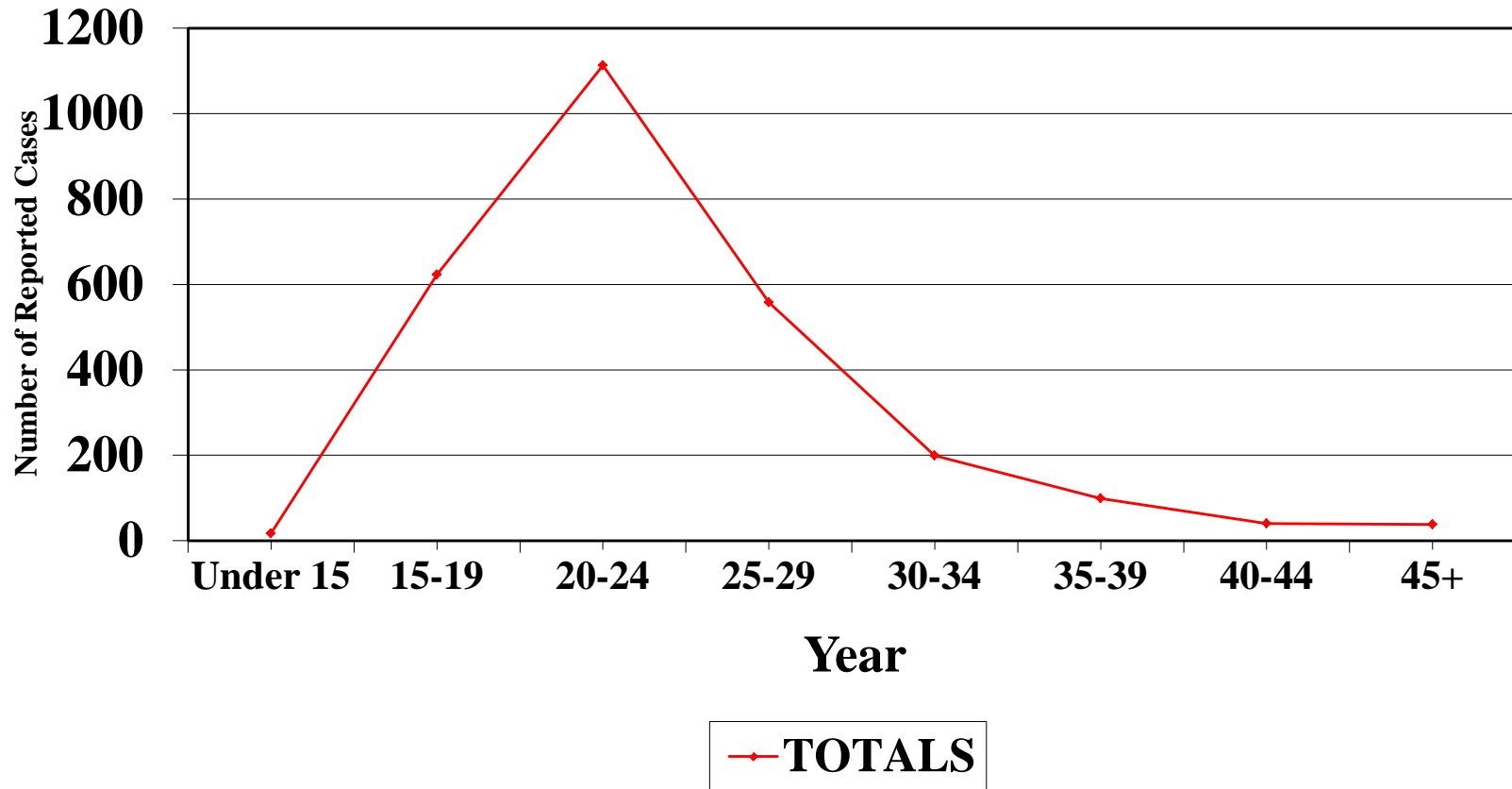


## Reported Chlamydia NW District 2015/2016



Reported Chlamydia				
County	2015	2015 Percent of Total	2016	2016 Percent of Total
Cameron	10	0.35%	5	0.19%
Clarion	89	3.10%	106	3.95%
Clearfield	108	3.76%	149	5.55%
Crawford	179	6.23%	207	7.71%
Elk	67	2.33%	66	2.46%
Erie	1245	43.36%	1033	38.47%
Forest	15	0.52%	8	0.30%
Jefferson	68	2.37%	79	2.94%
Lawrence	292	10.17%	282	10.50%
Mckean	132	4.60%	81	3.02%
Mercer	436	15.19%	434	16.16%
Venango	138	4.81%	163	6.07%
Warren	92	3.20%	72	2.68%
<b>Total</b>	<b>2871</b>	<b>100%</b>	<b>2685</b>	<b>100%</b>

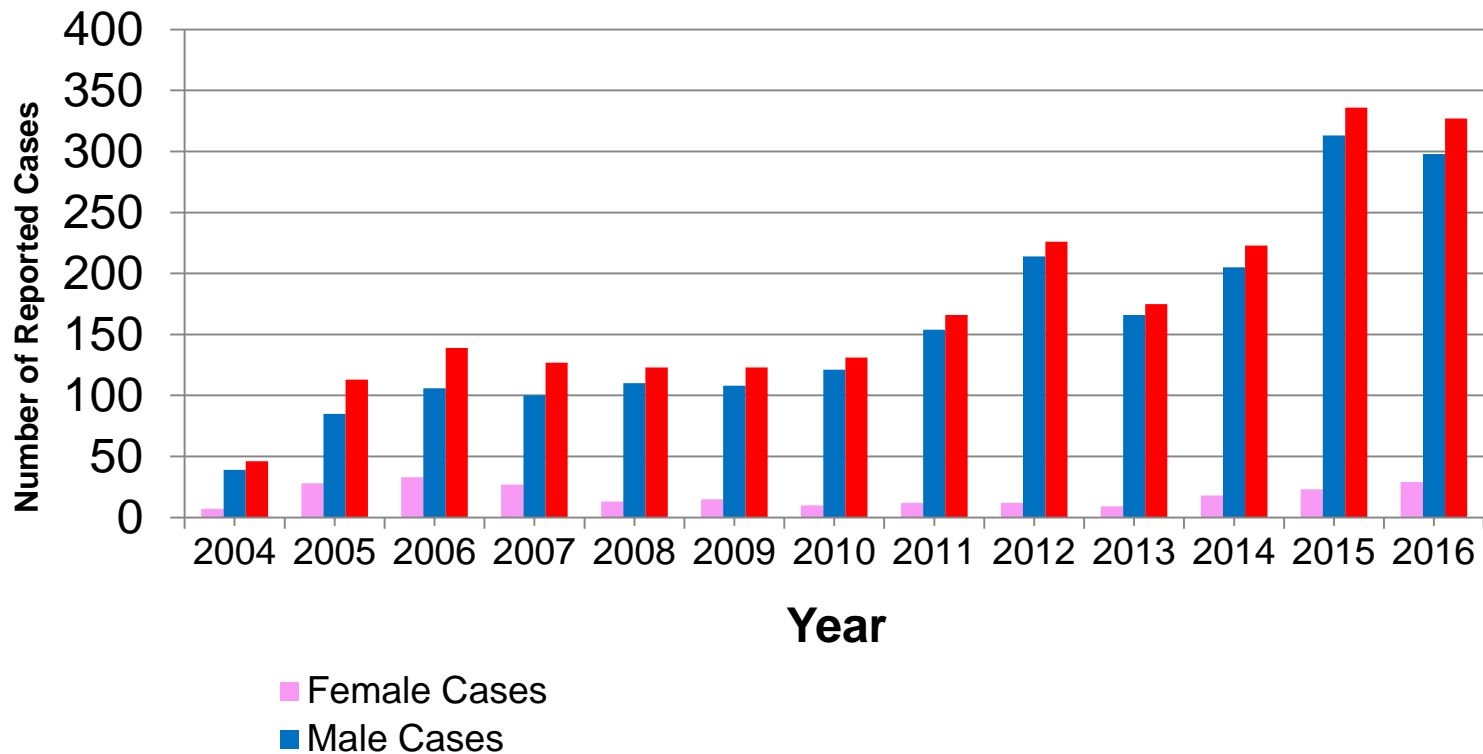
# Reported Chlamydia by Age NW District 2016



## Historical Background:

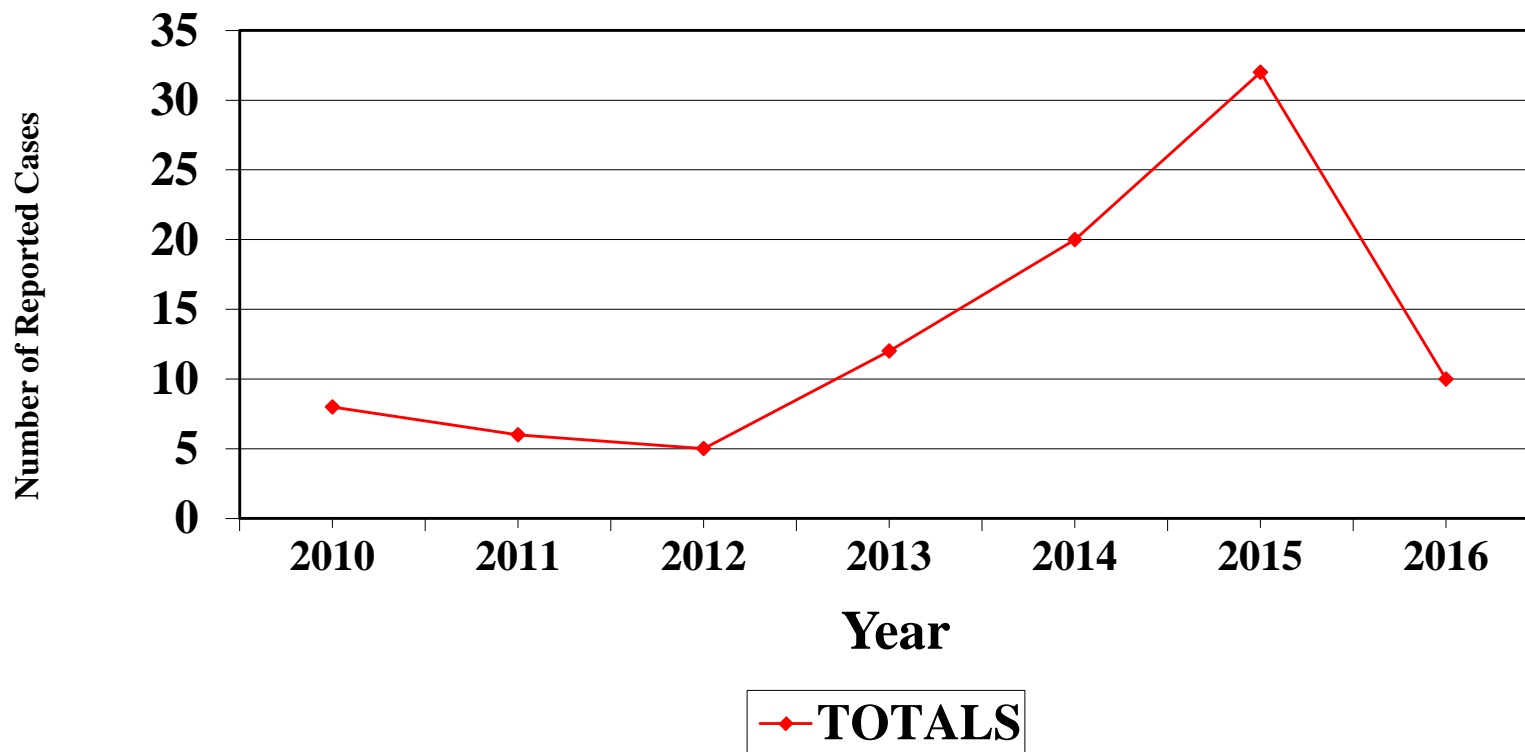
- Emergence of syphilis in Europe in 1490s
- Imported from the Americas (Columbian theory) or Emergence in Europe from other treponemal diseases
- Severe disease (called The Great Pox to distinguish it from smallpox)
- Disease seems to have been much more virulent when it first emerged in Europe
- Highly prevalent in many countries/societies in pre-penicillin era
- Estimates of 10% of U.S. population infected in early 20th Century
- Dramatic drop in incidence/prevalence after introduction of penicillin in mid-1940s
- Re-emerging has a public health threat
- Pennsylvania reporting the highest number of reported cases in 15 years
- HIV and syphilis co-facilitate transmission of infections.

# Reported Primary and Secondary Syphilis Pennsylvania 2004-2016 (Exclusive of Philadelphia)



(Pennsylvania Exclusive of Philadelphia)

# Reported Primary and Secondary Syphilis NW District 2010-2016



# Our Challenge

- How do we keep people alive, and uninfected with STD, HCV, and HIV until they can get into drug treatment that allows treatment integrity and offers opiate substitution therapy with ongoing support through early recovery?