



# PrEP and STIs



## MISSION

**Gus Cairns, PrEP in Europe**  
**Warsaw, 10 October 2019**

The PrEP in Europe Initiative is a partnership of research organisations dedicated to increasing access to pre-exposure prophylaxis (PrEP) throughout the European region.

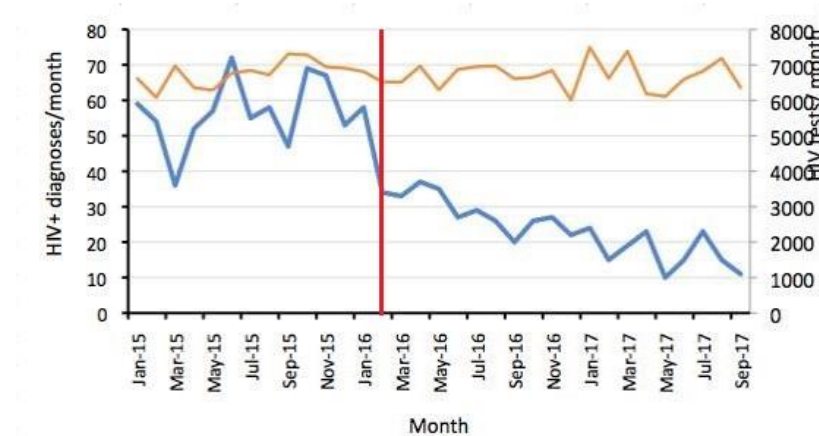
This website provides information on the effectiveness and availability of PrEP.

It provides news and advice to help strengthen advocacy for PrEP throughout Europe.

We aim to help organisations develop consistent policy demands for PrEP and to provide

# PrEP works...

- PrEP (or its promise) → more frequent testing
- More frequent tests → earlier diagnoses + better PrEP adherence
- Earlier diagnoses → quicker treatment
- Quicker treatment + PrEP → fewer HIV diagnoses



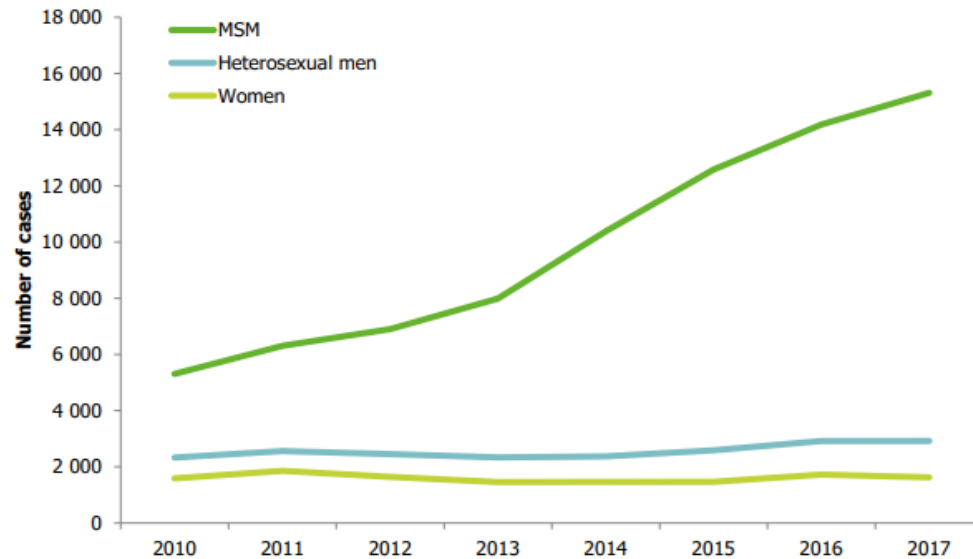
Dean St HIV diagnoses. Number in Oct 2015: **70**.  
Number in Oct 2017: **4**. Red line is when policy  
of monitoring and supporting people who  
bought PrEP online was introduced.

# But what about STIs?

Annual epidemiological report for 2017

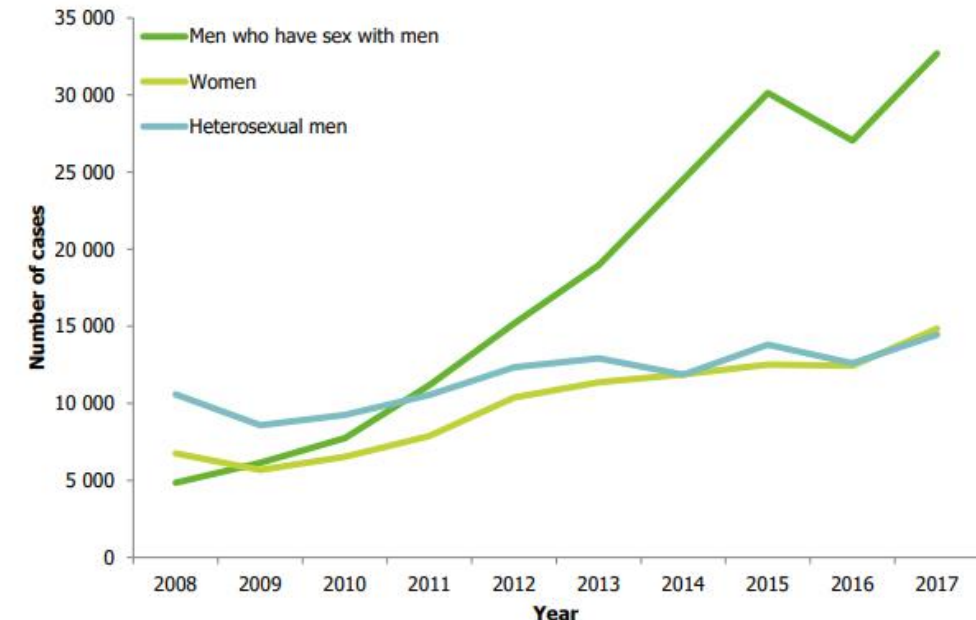
SURVEILLANCE REPORT

**Figure 7.** Number of confirmed syphilis cases by gender, transmission category and year, EU/EEA countries reporting consistently, EU/EEA, 2010–2017



Source: Country reports from the Czech Republic, Denmark, Finland, France, Germany, Hungary, Iceland, Ireland, Latvia, Lithuania, Malta, the Netherlands, Norway, Portugal, Romania, Slovakia, Slovenia, Sweden and the United Kingdom.

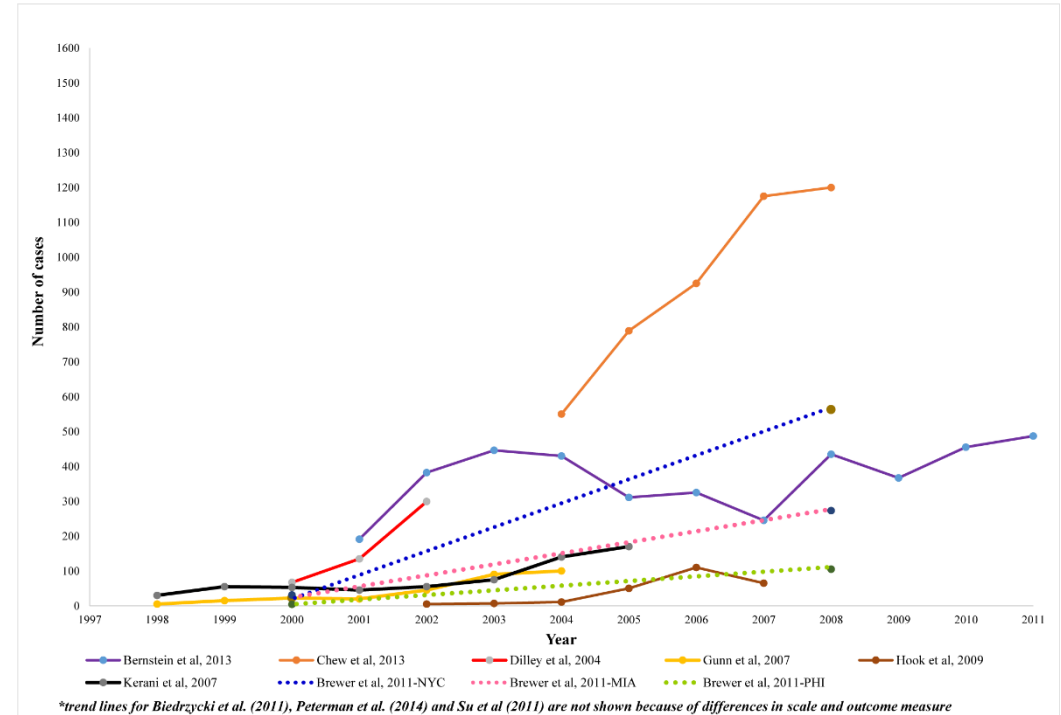
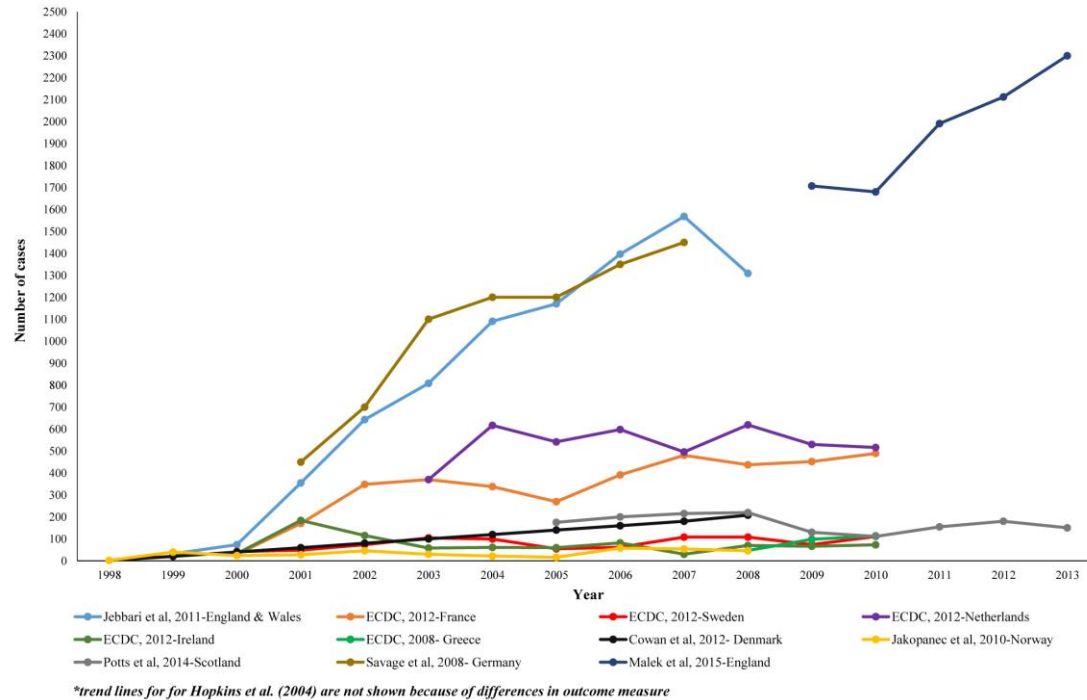
**Figure 6.** Number of confirmed gonorrhoea cases by gender, transmission category and year, EU/EEA countries reporting consistently, EU/EEA, 2008–2017



Source: Country reports from Cyprus, the Czech Republic, Denmark, France, Latvia, Lithuania, Malta, the Netherlands, Norway, Romania, Slovakia, Slovenia, Sweden and the United Kingdom.

When we think about STI increases we tend to think about a) recent increases b) gay men c) bacterial ones

# STI increases didn't start with PrEP



Syphilis rare in 1990s: started reappearing in 2000, in both Europe (left) and US (right). First Aidsmap article in 2001: <http://www.aidsmap.com/news/oct-2001/hiv-rate-uk-could-rise-following-recent-increase-stis>

# Not all STIs have increased (Europe)

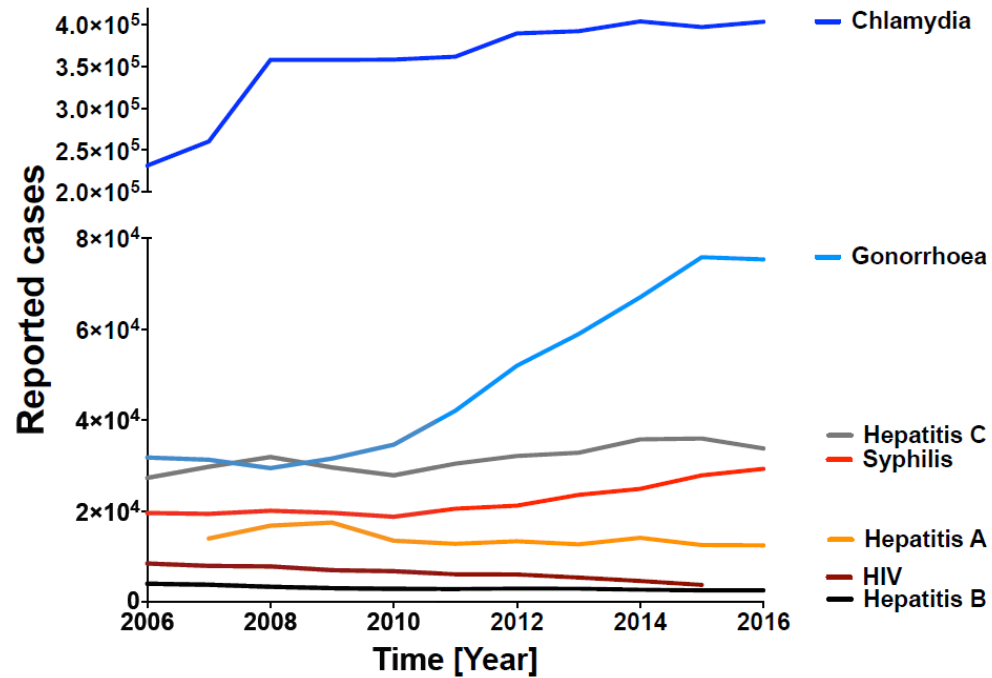
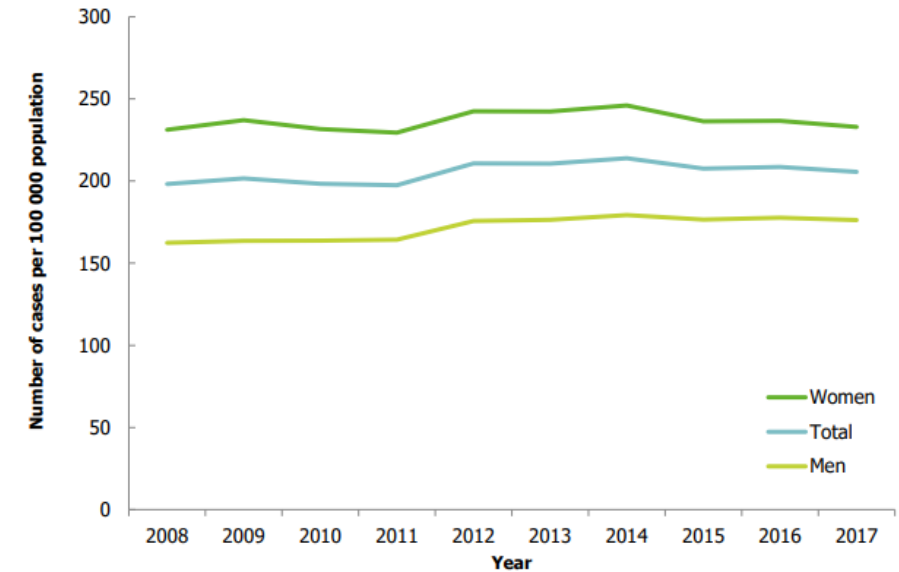


Figure 4. Distribution of confirmed chlamydia cases per 100 000 population by gender and year, EU/EEA countries reporting consistently, 2008–2017



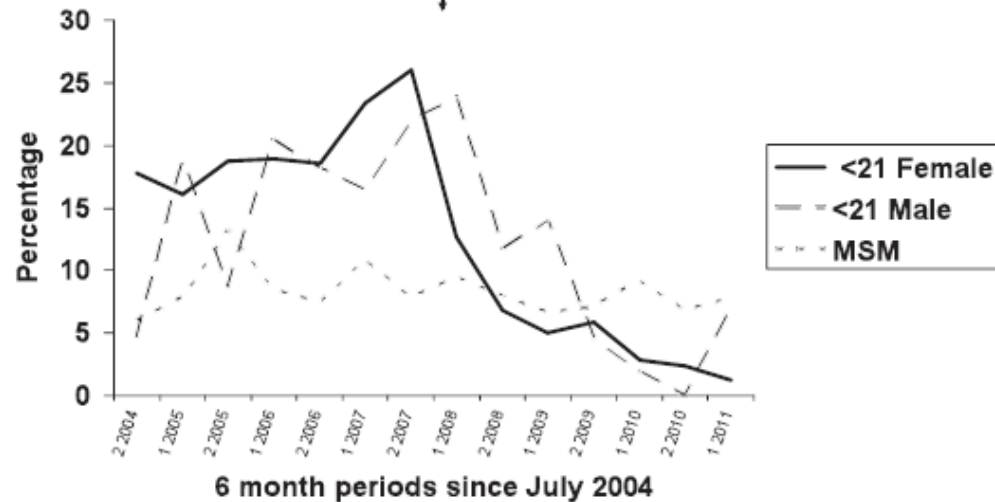
Source: Country reports from Cyprus, Denmark, Estonia, Finland, Iceland, Ireland, Latvia, Lithuania, Luxembourg, Malta, Norway, Poland, Romania, Slovakia, Slovenia, Sweden and the United Kingdom.



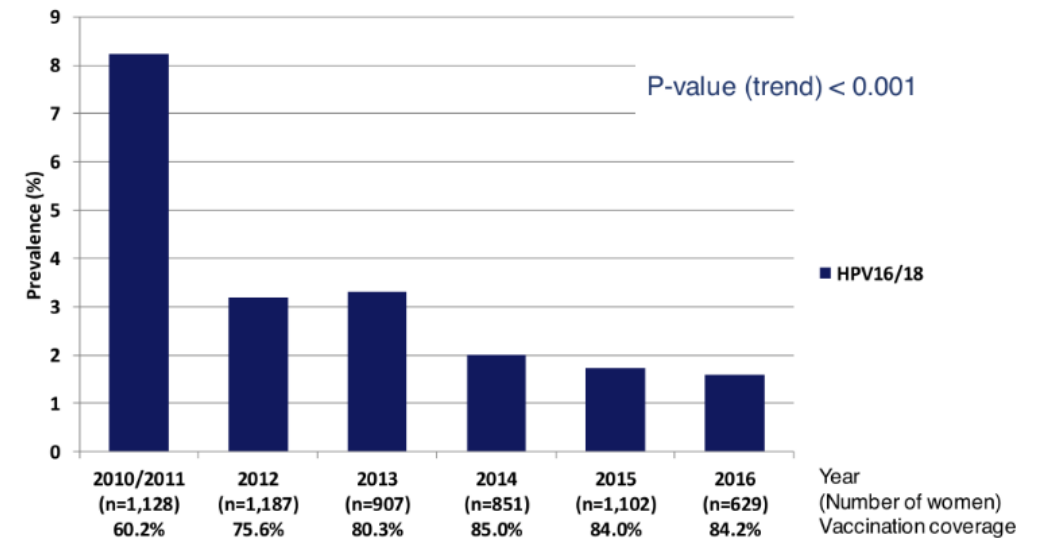
# An STI success: HPV

Presentations with warts in men and women <21 years, and MSM all ages, July 2004 to end June

2011  
Vaccination program commences



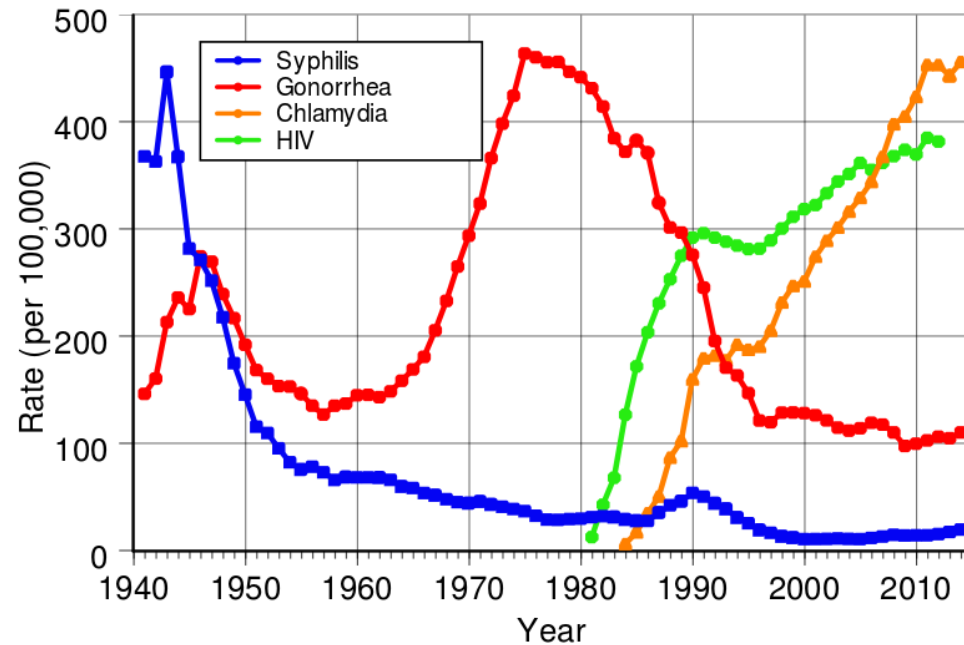
Changes in post-vaccination HPV prevalence in England: 16-18 year old females



LH slide: Victoria state, Australia. Shows if you give HPV vaccine to young women, infections go down in straight men but not gay men

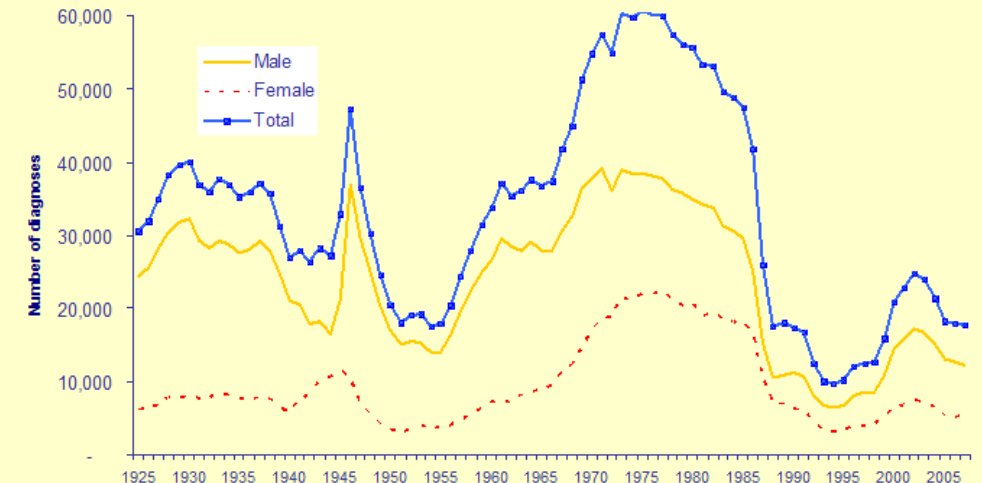
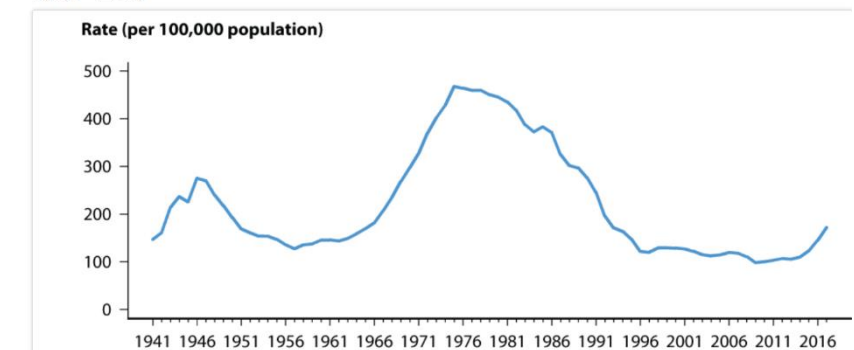
# Depends on your timescale...

Sexually Transmitted Diseases in the United States



Chlamydia not testable till early 1980s and asymptomatic infections not routinely tested for in UK till mid 90s.  
Difference between syphilis and gonorrhea after WW2?  
Antibiotic resistance

Figure 14. Gonorrhea — Rates of Reported Cases by Year, United States, 1941–2017

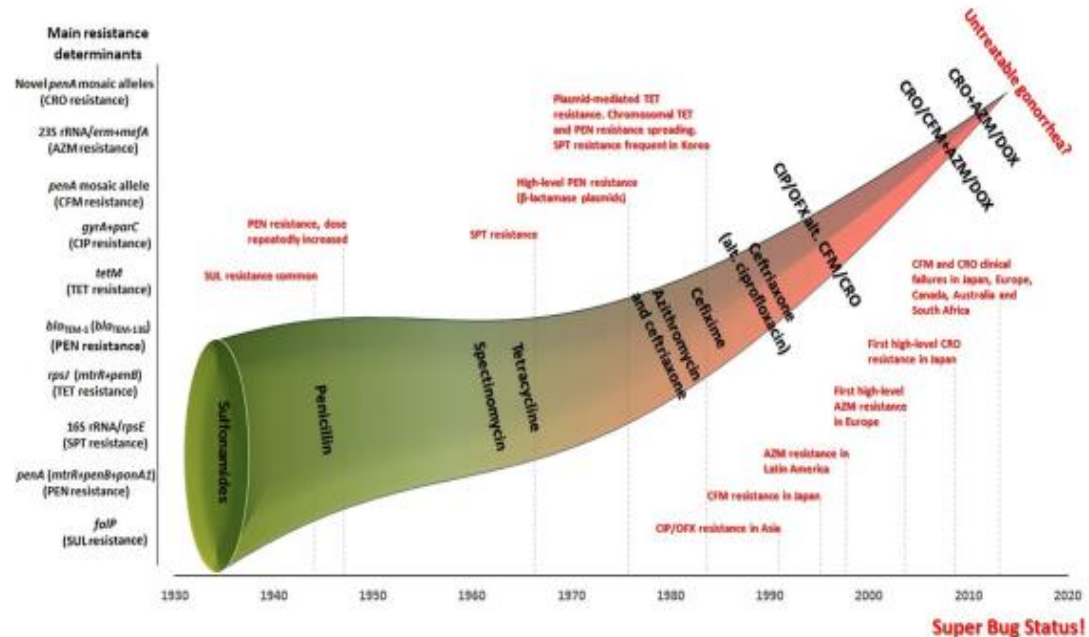


\* Scotland & Northern Ireland data are excluded as they are incomplete from 1925 - 2003

Routine GUM clinic returns

# Gonorrhoea resistance – inevitable? (No.)

History of discovered and recommended antimicrobials and evolution of resistance in *Neisseria gonorrhoeae*, including the emergence of genetic resistance determinants, internationally.

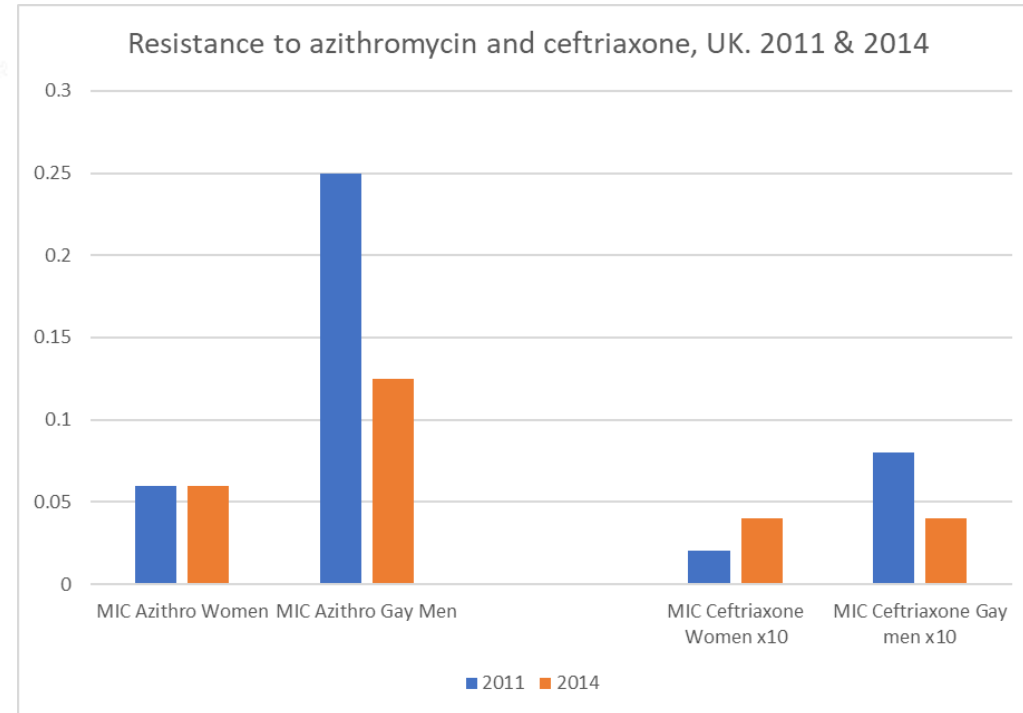


Magnus Unemo, and William M. Shafer Clin. Microbiol. Rev. 2014; doi:10.1128/CMR.00010-14

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Clinical Microbiology Reviews



In US, ceftriaxone resistance in gay men

– 2011 0.95%

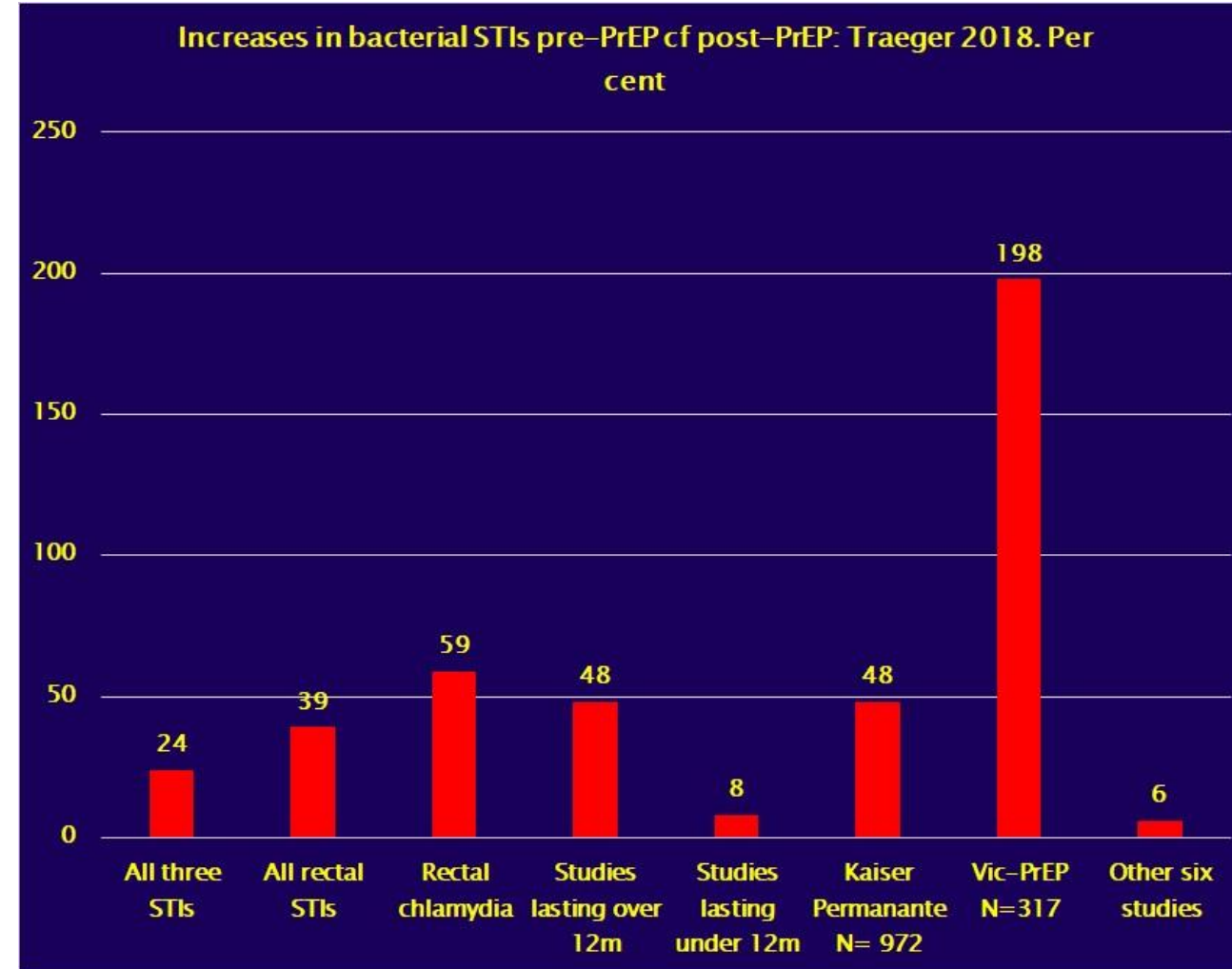
- 2013 0.07%

Antibiotic resistance, like ARV resistance, is always caused by poor prescribing of suboptimal regimens



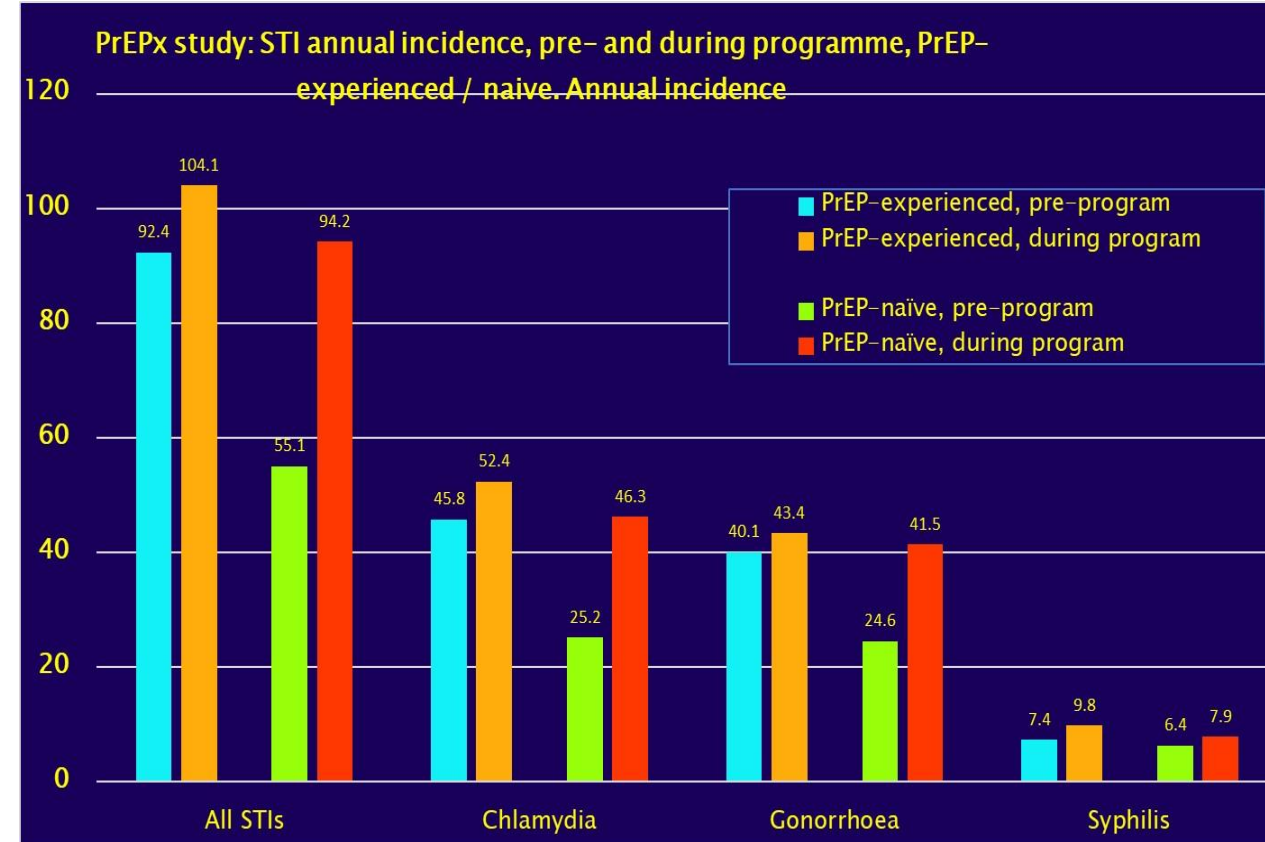
# Does starting PrEP increase STI risk? 1

- March 2018: meta-analysis of 8 studies suggested yes
- 24% increase in 3 bacterial STIs post-PrEP cf. 6 months before PrEP
- More recent and bigger studies had bigger increases
- BUT only 2/8 studies actually had significant increases



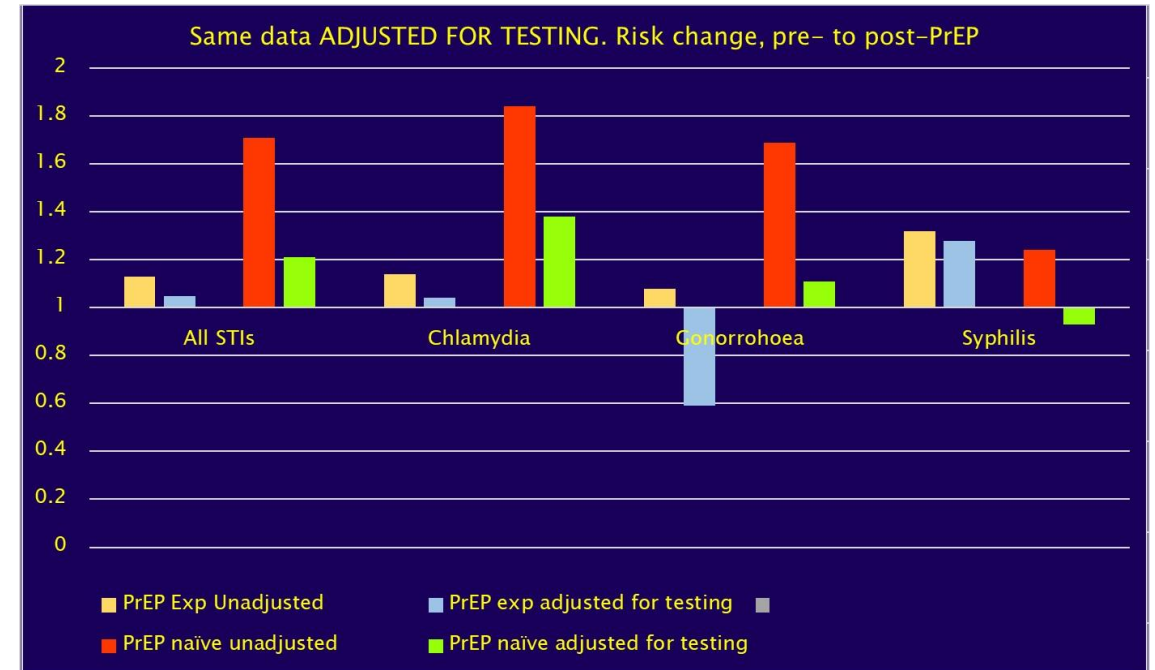
# Does starting PrEP increase STI risk? 2

- Feb 2019 analysis by same author, of PrEPx study in VIC state
- Significant increases in all STIs in people new to PrEP
- No significant increases in people who'd already been on PrEP



# Does starting PrEP increase STI risk? 3

- Size of change much smaller when adjusted for testing
- All STIs and rectal chlamydia still up, but by less (21% and 38% in PrEP-naïve)
- Gonorrhoea diagnoses almost the same once more tests taken into account
- Syphilis cases actually decreased after adjusting for testing



# You only find what you look for...

## Top 5 European Countries per STD

Average Rate per 100,000 Residents from 2000 - 2013

Chlamydia	Rate	HPV	Rate
1. Iceland	618.82	1. United Kingdom	131.65
2. Norway	424.42	2. Ireland	72.90
3. Denmark	371.42	3. Iceland	38.24
4. Sweden	361.56	4. Russian Federation	28.86
5. United Kingdom	281.07	5. Belarus	27.02

Hepatitis B	Rate	Hepatitis C*	Rate
1. Iceland	13.08	1. Iceland	22.75
2. Latvia	11.71	2. Sweden	21.97
3. Russian Federation	10.53	3. Finland	20.23
4. Ukraine	10.46	4. Ireland	14.54
5. Bulgaria	10.21	5. United Kingdom	10.77

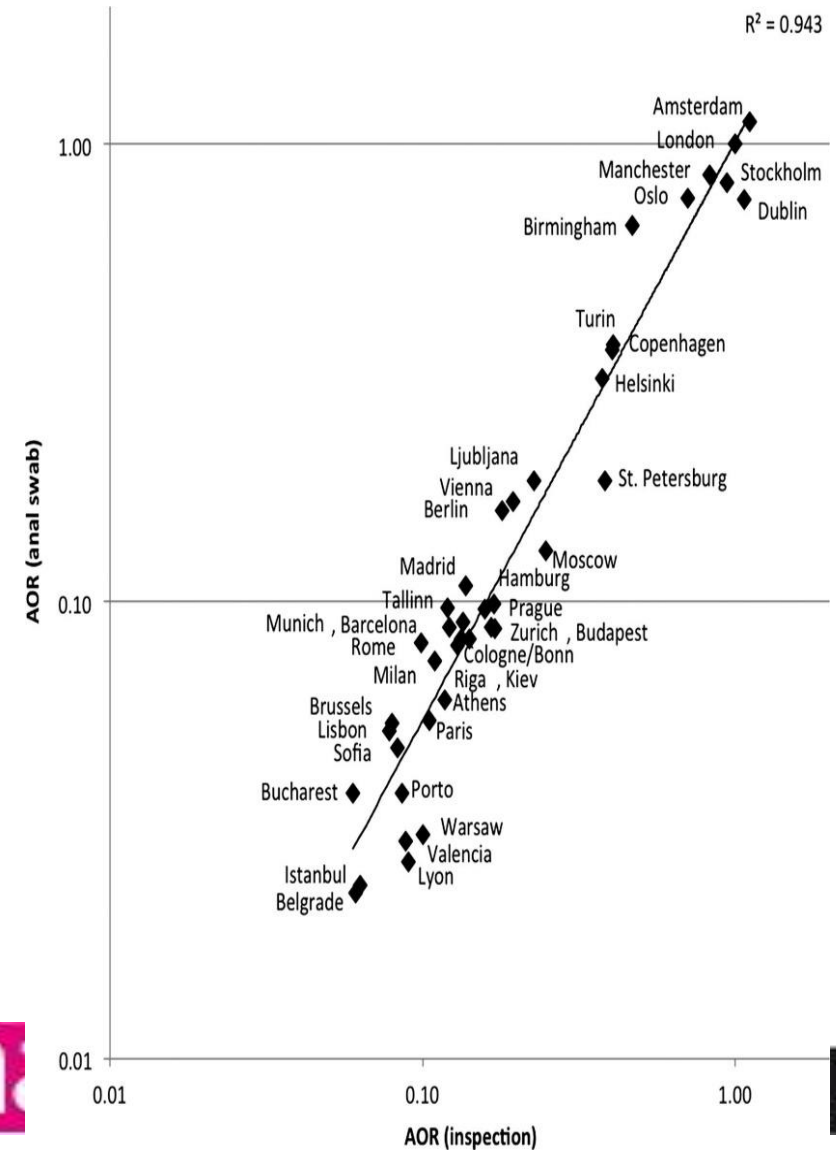
Herpes	Rate	Gonorrhea	Rate
1. Republic of Moldova	67.21	1. Russian Federation	68.47
2. United Kingdom	35.80	2. Belarus	56.42
3. Estonia	21.06	3. Republic of Moldova	44.85
4. Russian Federation	18.52	4. Ukraine	35.80
5. Belarus	17.96	5. United Kingdom	34.60

Syphilis	Rate	HIV	Rate
1. Republic of Moldova	78.46	1. Estonia	45.25
2. Russian Federation	74.29	2. Russian Federation	33.61
3. Bulgaria	46.79	3. Ukraine	27.05
4. Ukraine	44.69	4. Portugal	17.35
5. Monaco	41.11	5. Latvia	17.34

\*Hepatitis C average rate per 100,000 residents, 2000 - 2012

Only a few European cities do the right tests to detect STIs in gay men (so for a while, appropriate testing would mean more STIs)

High HIV risk  $\neq$  high STI risk and vice versa

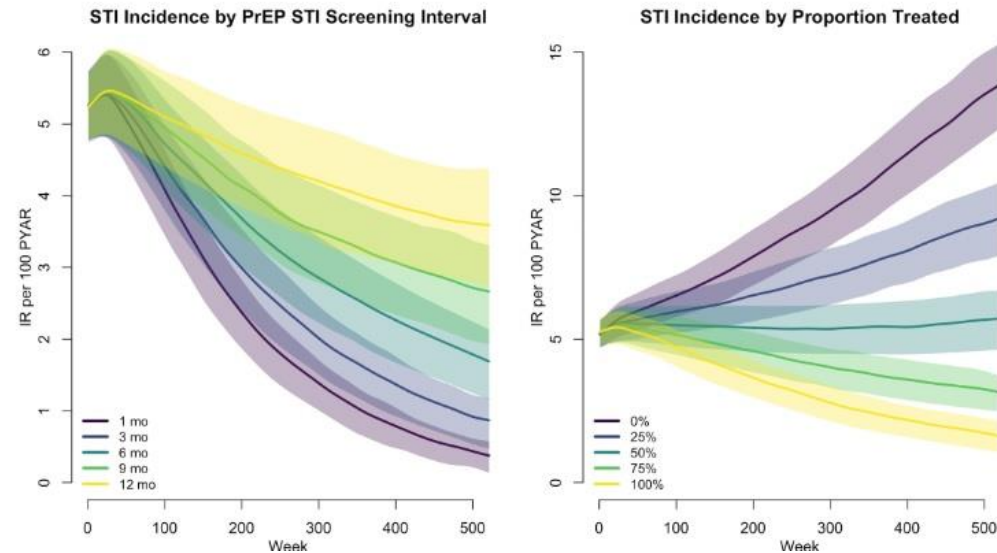


# Tested and treated STIs = fewer STIs?

Untreated STIs = more STIs

So */F* people are screened more frequently, STIs (esp asymptomatic) will be detected and treated more often

Computer model: regular testing / treatment could lead to fall in STIs after initial rise





Thank you! (Pic from last summit)

