




Christopher Fairley

Research gap and what it means
for control

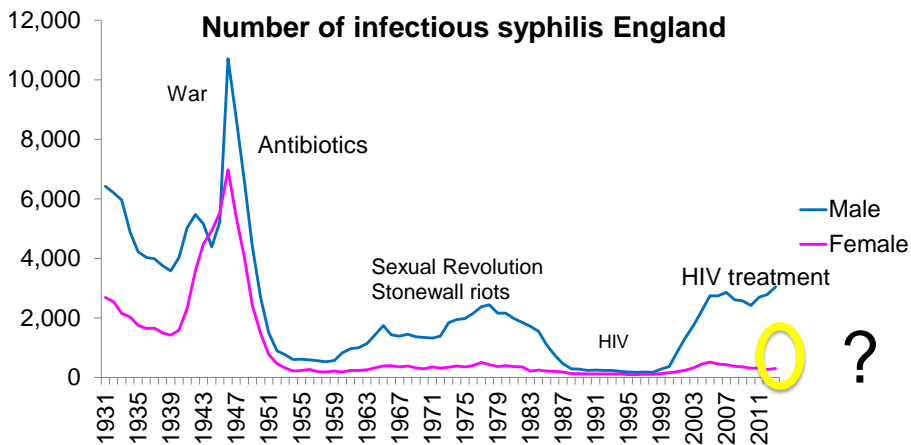


If we don't understand why
something is happening
....what hope have we got to
control it

Understand STI's rise and
fall?



There is an explanation - always



3 Source www.hpa.org.uk



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Facts about gonorrhoea

Men

- 90%+ symptomatic
- Present (median 1 day)

Women

- Majority (80%) of women presenting as contacts of GC have symptoms
 - but difficult study to do



Accessible and a population that 'accesses' health care= control

Clinical Microbiology and Infection. 2017. 23(8): 555-559. doi.10.1016/j.cmi.2017.02.020
Lancet 1977 June 4, 1182-5

4

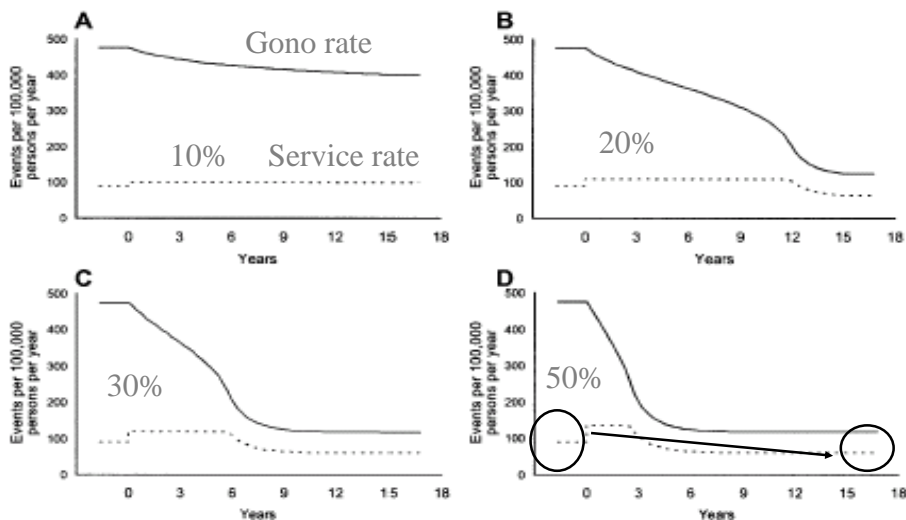


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Increases in clinical services for gonorrhoea and effect on prevalence of infection over time



5 Source JID 2005;192:824-830, Figure 1

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Why do STI's rise in a 'city'

- **Because reproductive rate changes**
 - Sustained Endemic transmission locally ($R_0 > 1$)
- OR
- **Because large influx of cases**
 - no endemic transmission locally ($R_0 < 1$)
 - » Other than 'die out' of introduced cases
- **Combination of both**



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What could the rise mean?

Sustained Endemic transmission in heterosexuals



**No Sustained Endemic Transmission in heterosexuals
And imported cases**



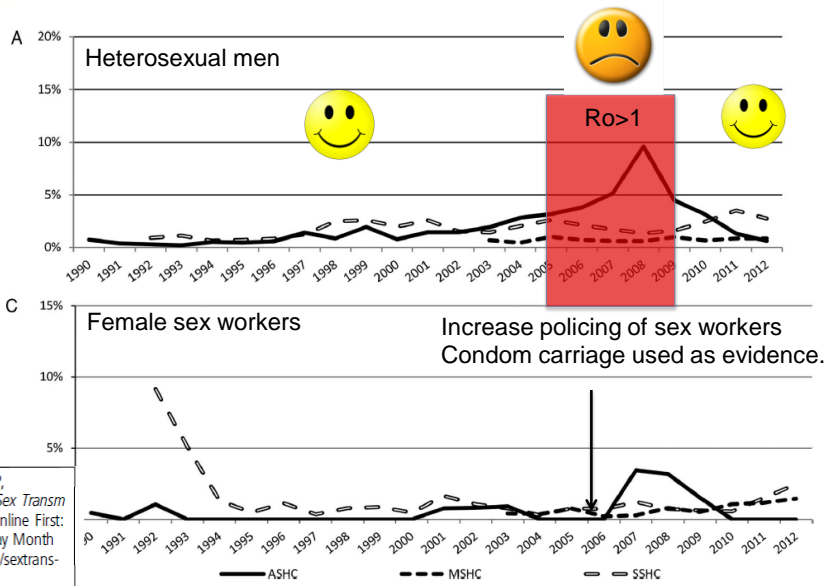
7



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Scenario $R < 1$ → $R_0 > 1$



To cite: Li B, Bi P, Waddell R, et al. *Sex Transm Infect*. Published Online First: [please include Day Month Year] doi:10.1136/sextrans-2014-051918

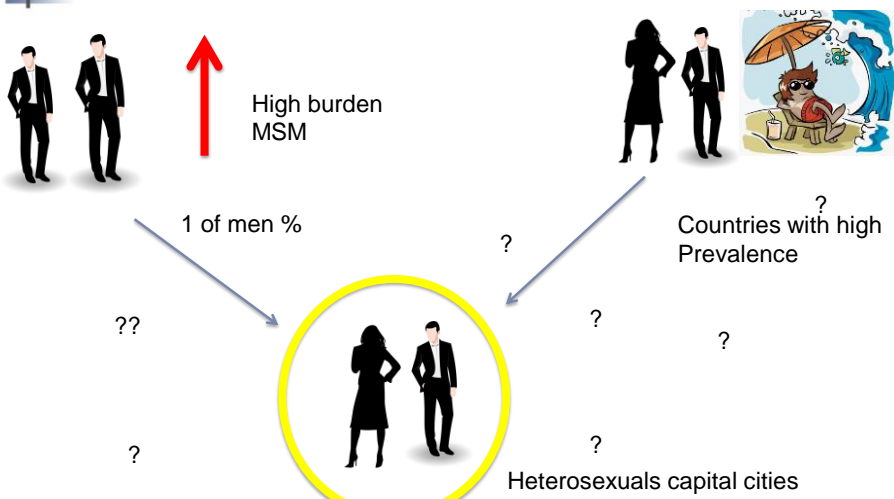
Where imported cases come from?

populations with high burden of infection

9



Travellers and bisexual men



10





The Age
8th October 2017

- "I was just pretty much swiping on anyone": Matthew Neale used Tinder to meet other travellers and locals during a three-month trip to Thailand and Vietnam. *Photo: Katherine Griffiths*
- <http://www.theage.com.au/lifestyle/life-and-relationships/tinder-tourists-quick-sex-app-replaces-lonely-planet-as-tool-for-travellers-20171004-gyugo5.html>

11

Courtesy Jane Hocking

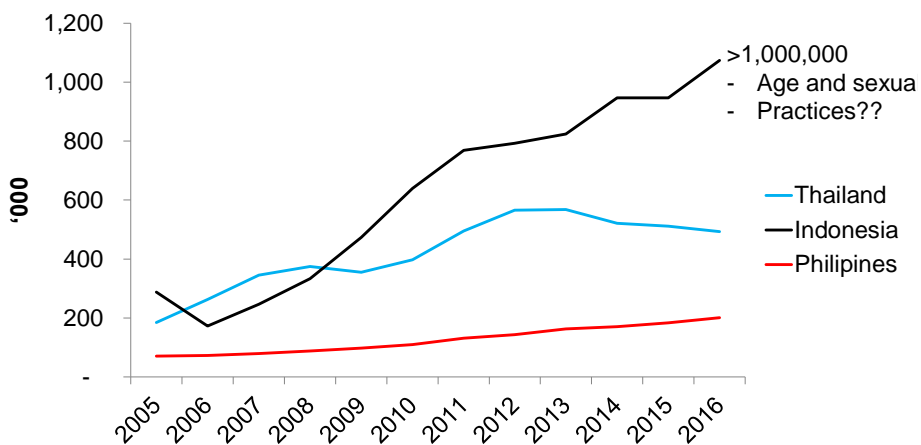


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Outbound tourist numbers



12

DFAT



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Entirely inadequate information on travellers and their risks

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high GC prevalence country
(have RR of 3 for GC)

13

Chow MSHC un published data



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Bisexual men

- 1% of men in AHSR 2
- 6% of men who have sex with men- have sex woman also at MSHC

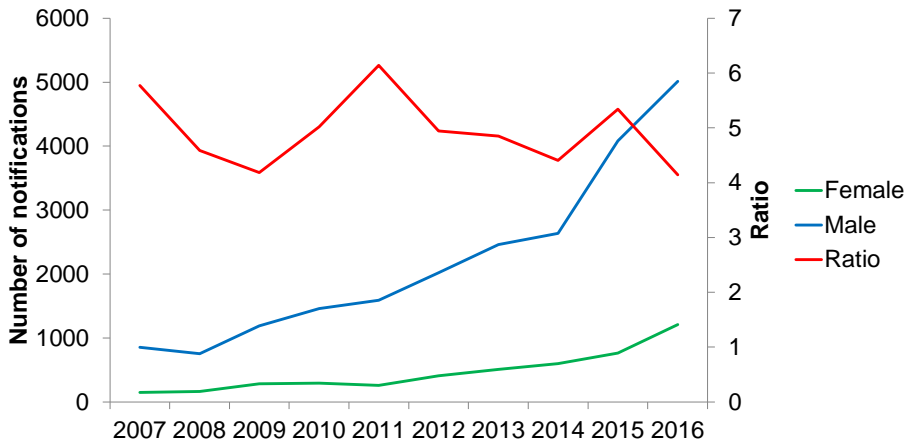
14



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Victorian Gono Notifications



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Stable M/F Ratio

- MSM epidemic and $R_0 < 1$ heterosexuals
 - Bisexual men stable

Not consistent with

- Travellers increasing and $R_0 < 1$ heterosexuals or
- $R_0 > 1$ for heterosexuals
 - Expect M/F ratio fall towards 1
- BUT could be a Combination
- But we have 'no' idea

16

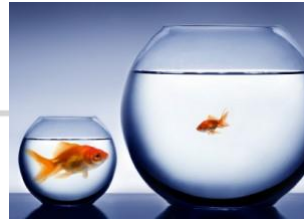


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So Unfair



- Reason gay men gets lots more gonorrhoea is because of asymptomatic nature of infection.



- Emerging Infectious Diseases**. 2017. 23(1): 102-104 doi: 10.3201/eid2301.161205

17



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Estimate number of secondary cases in heterosexuals

- Assume reproductive rate in heterosexuals of;
 - 0.75 OR
 - 0.5
- Every case in bisexual/traveller men that is transmitted
- $R_0=0.75$ (1), 0.75, 0.56, 0.42,0 (total 2.9 extra cases)
- $R_0=0.5$ (1), 0.5, 0.25, 0.125....0 (total 1.0 extra cases)

18

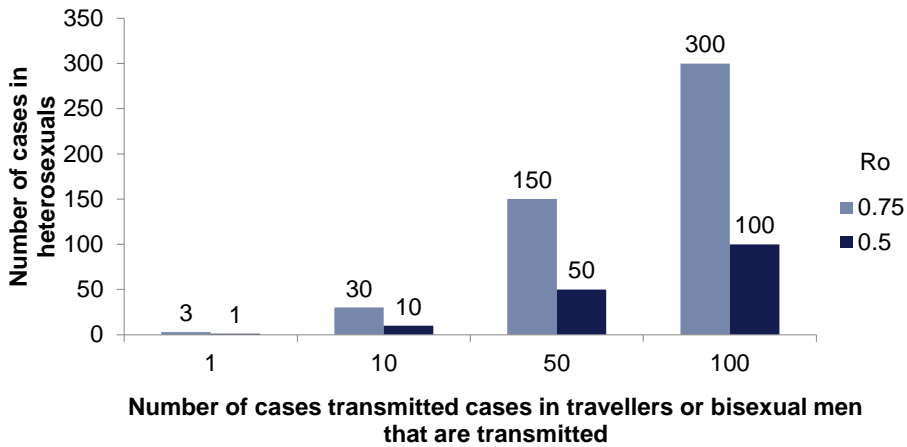


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Cases in heterosexuals for every case in Travellers or bisexual men with GC Tx



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So what is happening in Australian Capital cities with heterosexuals?

Fundamental change in reproductive rate?

20



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ASHR1 vs ASHR2

- Condom use at 1st sex (risen)
- Condom use at most recent sex (risen) 18% to 23%
- Knowledge improved
- Less concurrency
- BUT
- Sexual identity – ‘bisexual men’ risen 0.94% to 1.26% (P=0.03)

21



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Control – depend on cause

Ro>1 heterosexuals

- Traditional control strategies in heterosexuals
 - Accessible health care!
 - Symptom recognition
 - Screening
 - Condom use

MSM or Travellers

- MSM
 - Mouthwash (wait 6 months OMEGA trial results)
- Travellers
 - Condom use
 - Symptom recognition
 - Return screening?

22



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Before we can control
anything
We need to know



23