

# The Latest in STIs

Dr. Suneeta Soni

Royal Sussex County Hospital, Brighton



## Background

Rates of new HIV diagnoses have slowed but rates of bacterial STI are increasing



## Testing

NAATs are getting better and faster

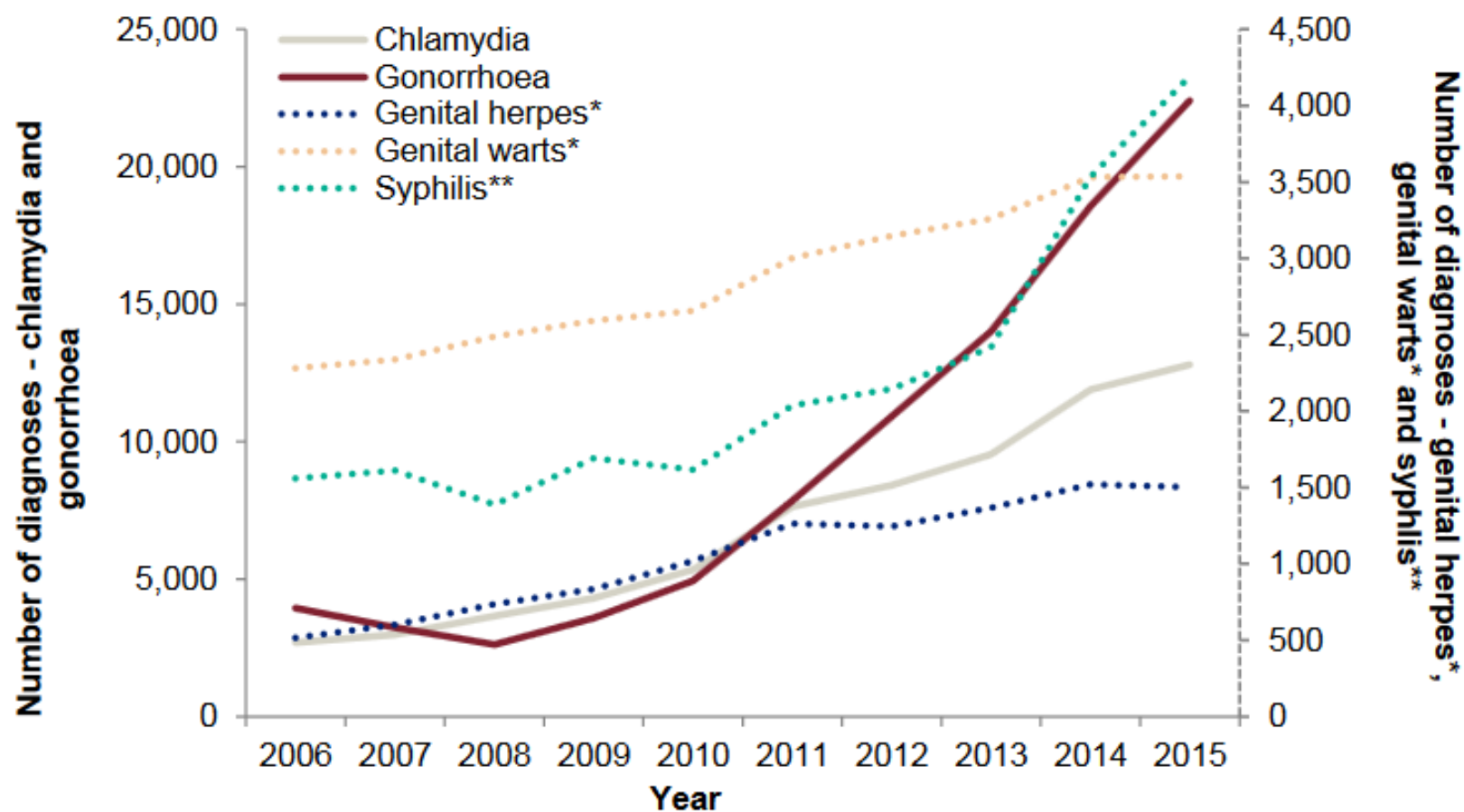
Ways to test, limitations



## Treatment

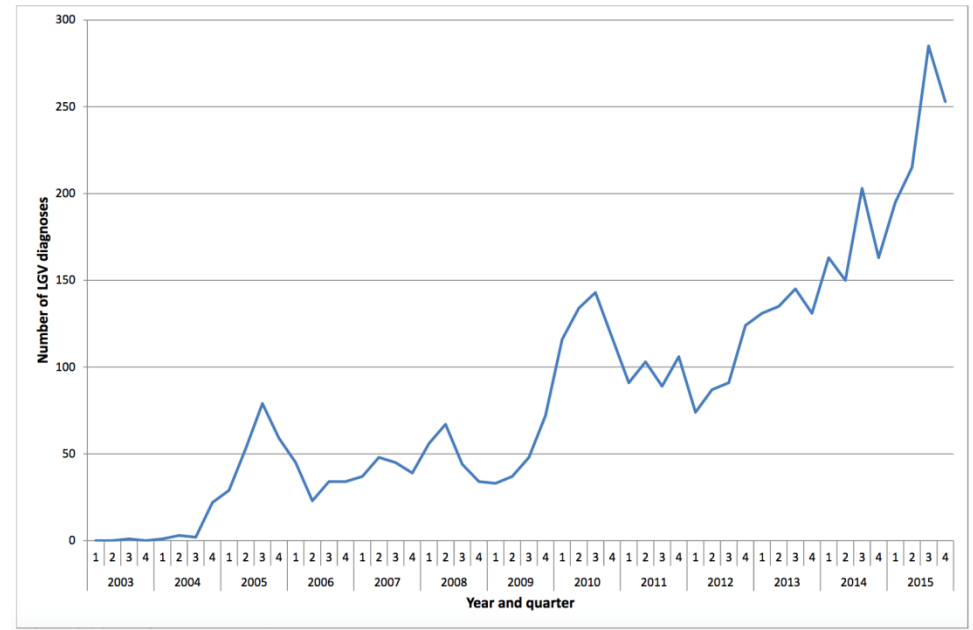
What to use and what NOT to use

# New STI diagnoses in MSM 2006-2015



# LGV

- 948 cases in 2015
- HIV+ white MSM
- Asymptomatic LGV
  - 2007 <7%
  - Saxon *et al* 2012 27%
  - Griffiths *et al* 2016 64%
- 36/36 men with LGV cleared with 1-2 weeks doxy



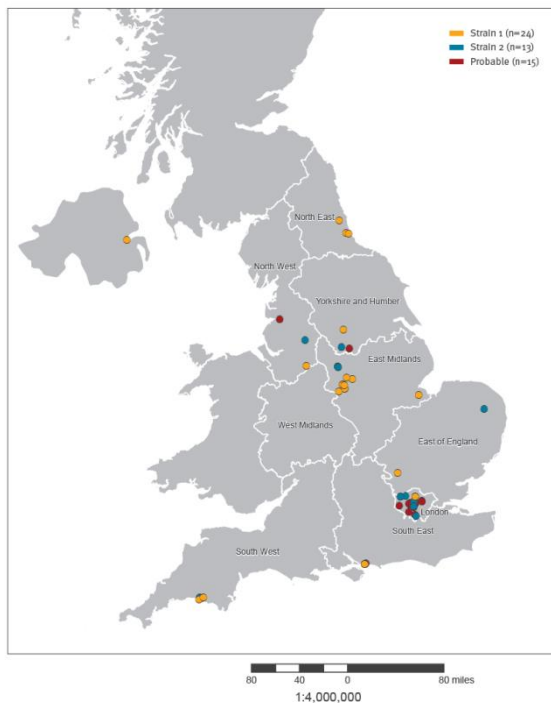
# Hepatitis C



- Rising incident infection
- HIV-positive MSM (9%)
- Associated with injecting, chemsex, other high risk sex, bacterial STI
- Scale up of DAAs could reduce prevalent Hep C
- Shift in epidemic towards HIV-neg MSM

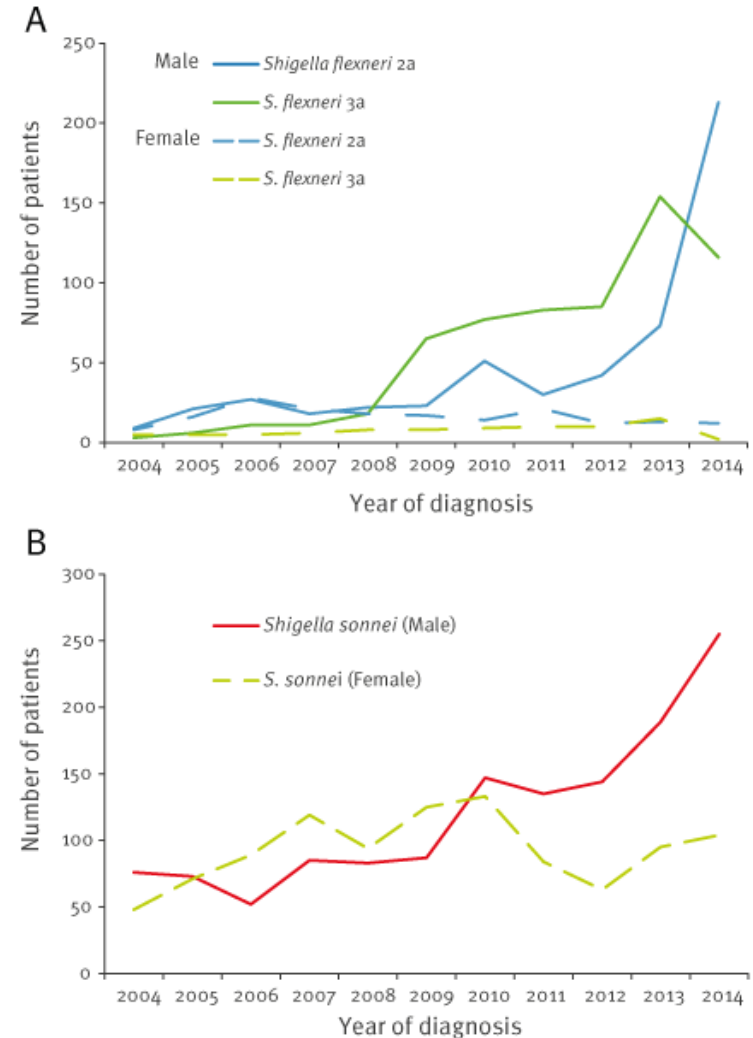
# Enteric Infections in MSM

## Hepatitis A outbreak 2016-2017



**FIGURE 1**

Patients aged 16 to 60 years diagnosed with (A) *Shigella flexneri* serotypes 2a and 3a (n=1,430) and (B) *S. sonnei* (n=2,365), with no reported history of travel outside the United Kingdom, by sex, England, 2004–2014



Serosorting

Chems

TasP

High risk sex

PrEP



**Rising incident STIs**

Serosorting

Chems

TasP

High risk sex

PrEP

Suboptimal  
diagnostics  
for bacterial  
STI



Treatment  
failure in  
bacterial STI

**Rising incident STIs**





# Health and Social Care Act 2012



Testing



**Sexual health**

**“I’ve got a discharge”**

## **HIV**

**Antiretrovirals:**

- virological failure
- toxicity
- pill burden
- drug interactions
- generics

**Research**

**Comorbidities/ARV toxicity:**

**Mental Health**

**Social**

**GP**

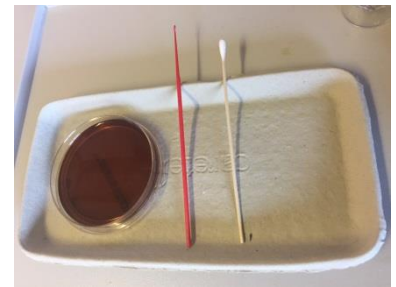
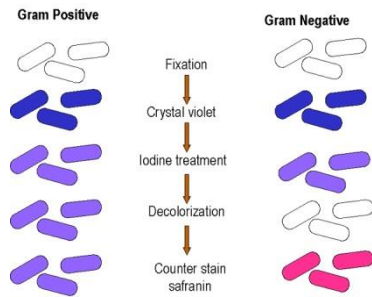
**EVERYTHING else!**

# “I’ve got a discharge”

- A Swab his nose. No! He means a urethral discharge!
- B Give him 1g azithromycin stat  
“that should clear up anything you may have”
- C Take a relevant sample, perform a highly sensitive multiplex POCT for CT/GC/MG/syphilis and treat him as appropriate
- D Refer him to the GUM clinic

# At the GUM clinic

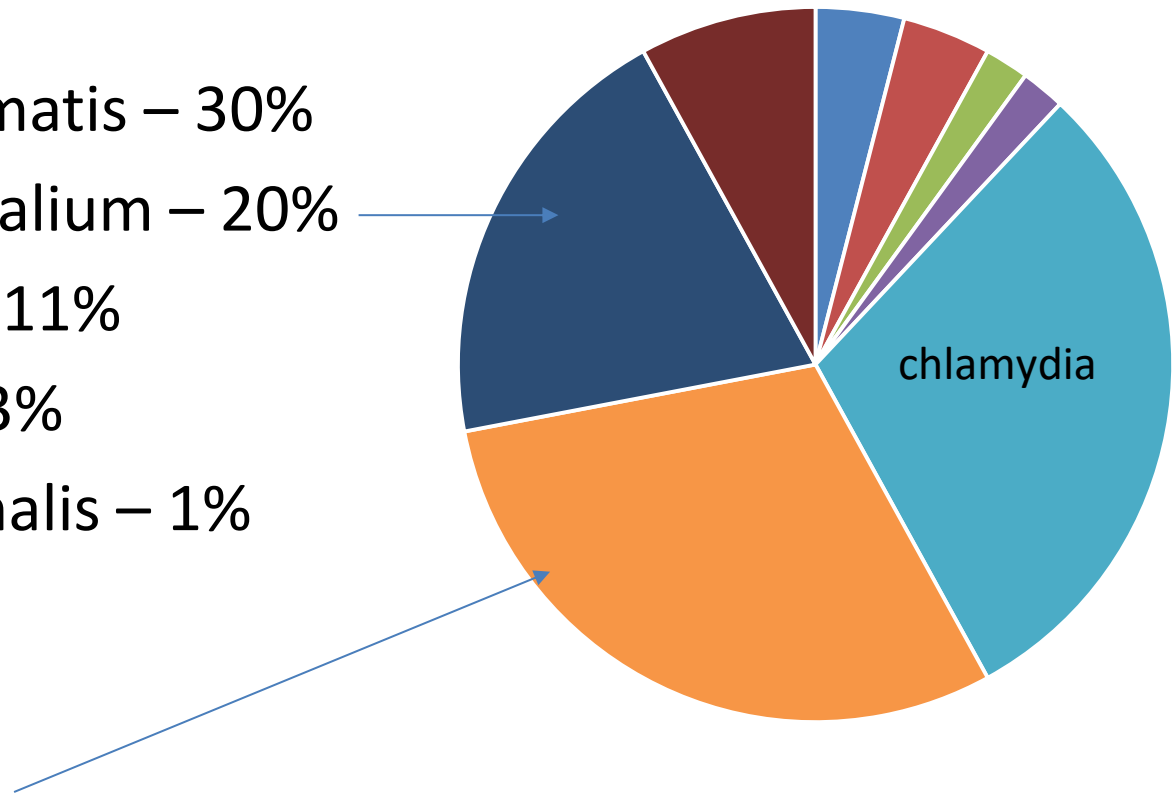
- Urethral sample
- Gram stain
- Microscopy for GNID and neutrophils
- Culture for sensitivities



# Non-gonococcal urethritis (NGU)

## Causes

- Chlamydia trachomatis – 30%
- Mycoplasma genitalium – 20%
- Ureaplasma spp – 11%
- Herpes simplex – 3%
- Trichomonas vaginalis – 1%
- Adenovirus – 2%
- Other – 3%
- Unknown – 30%



# More rapid diagnostics

Cepheid  
90 minutes



Atlas Genetics io  
30 minutes



TwistDx  
15 minutes



# Busier GUM clinics

- More patients, higher complexity, integration with contraceptive services
- Longer consultations:
  - Women: STI screen, contraception, sexual violence, alcohol
  - MSM: STI screen, PrEP, PEP, risk reduction, chemo, vaccination
- Innovating in clinic:
  - asymp “express” services
  - triage/senior model
  - queue management software
  - “sample first” approach



# Online testing

## **PROS**

- Frees up capacity in clinic to see more complex
- Reduced waiting times in clinic
- Convenient for patient
- Discreet, non-judgemental
- Reaching hard to reach

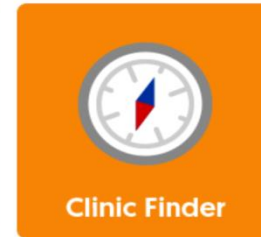
# Online testing

## PROS

- Frees up capacity in clinic to see more complex
- Reduced waiting times in clinic
- Convenient for patient
- Discreet
- Reaching hard to reach

## CONS

- Excluding the vulnerable
  - Risk reduction in neg patients
  - Eligibility for PrEP/PEP
  - Risk of pregnancy
  - Vaccination
  - Sexual violence
- Impact on research
- Poor return postal kits, over-ordering, “Worried well”



[Checkurself Under 25s](#) | 
 [Accessibility](#) | 
 [Cookie Policy](#) | 
 [Contact us](#)

Select Language

[STI Info](#)
[Home STI Kits](#)
[Instruction Video](#)

# Check Urself Plus<sup>TM</sup>

SH:24

STI test

Sexual health

Contraception

Get support

## Test at home

STI results by text in 7 days

Order a free test

# Online testing



online sti testing southampton



All

Maps

News

Shopping

Images

More

Settings

Tools

About 830,000 results (0.60 seconds)

## Online STI Test From £29 - The STI Clinic

**Ad** [www.thesticlinic.com/](http://www.thesticlinic.com/) ▼

Safe, Simple & Accurate **Test** Kit. Results in 24Hrs, Free Treatments.

Treatment Included · Fast Results · Accredited Lab Testing · Next Day Delivery

[Contact Us](#)

[STI Facts](#)

[Our Service](#)

[Full STI Screen](#)

## Home STI Testing - Order Yours

**Ad** [www.letsgetchecked.com/STI-Testing](http://www.letsgetchecked.com/STI-Testing) ▼

**Test** for a wide range of **STIs** including many not covered by clinic **tests**.

Safe, Accurate Testing · Accurate CE Marked Tests · Same Day Dispatch · Collect Your Own Sample

[Contact Us](#) · [Standard 6 Test](#) · [How It Works](#) · [STI Test - Complete 12](#) · [Our Blog](#) · [Activate Your Kit](#)

## Superdrug - Sexual Health - Treatment & Tests

**Ad** [www.superdrug.com/STI-Tests](http://www.superdrug.com/STI-Tests) ▼

Get Sexual Health Treatment Today - Free, Fast, Delivery!

UK Reg. Doctors · Save Time & Embarrassment · Confidential · Brand You Can Trust · Discreet

[Chlamydia Test Kits](#) · [How To Order Online](#) · [Get Help For Your STI's](#) · [Registered Pharmacy](#)

## STI Test Centre Southampton - Book an Appointment Today.

**Ad** [www.better2know.co.uk/page/std-sti-testing](http://www.better2know.co.uk/page/std-sti-testing) ▼ 020 7099 0955

Get a Confidential, Anonymous and Accurate **Test**. Call our team or [Book Online](#)



## Chlamydia Test Kit - | Sexual Health, hampshire, portsmouth ...

<https://www.letstalkaboutit.nhs.uk/forms/request-kit.asp> ▼

The complete range of **sexual health** services for: hampshire -portsmouth - **southampton**.

# Self sampling or self testing?

Self sampling – just specimen collection

Home sampling



Self testing – patient collects specimen, takes the test and interprets results

Home testing



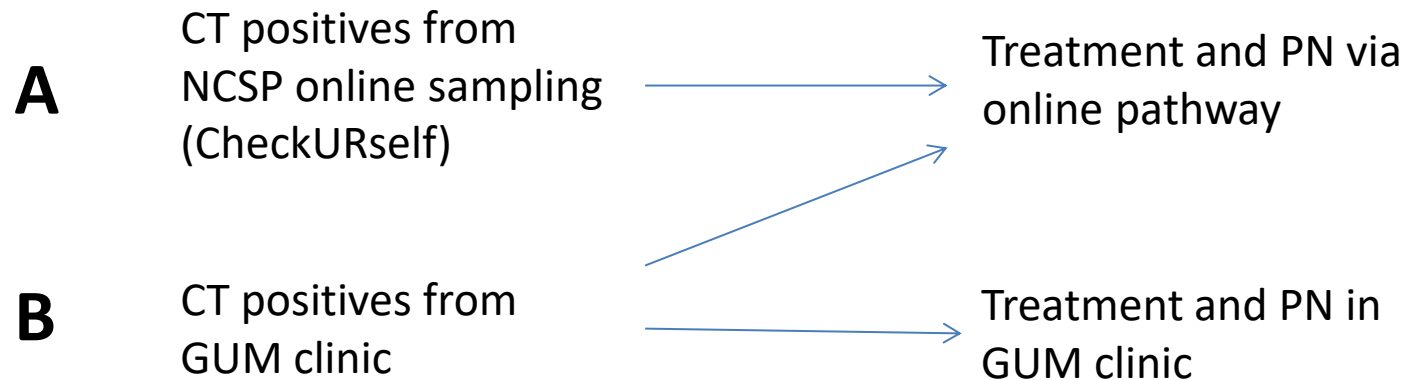
Online testing

Treatment

# eSexual Health Interventions

## - complete online care pathway

THE LANCET  
Public Health



Time to treatment for both online groups quicker for A than B

May work for CT but not for GC

# Online prescribing



★★★★★ 4.9 / 5

7 patient review(s) on **feefo**

We are verified by:



## Azithromycin

Manufactured by **TEVA**

Buy Azithromycin tablets online

Azithromycin is an effective cure that you can order at OnlineClinic to successfully treat STIs, such as chlamydia, gonorrhoea and bacterial infections, such as ureaplasma and mycoplasma in a single high dose, making it a very widely recommended antibiotic.

One 1000mg dose can clear up the infection entirely, as well as help you with any possible symptoms (some STIs are often initially symptomless) and it is particularly effective for persistent genital chlamydia, with a 96% cure rate. Our discreet and confidential service enables you to buy Azithromycin tablets and receive it the very next day after approval from one of our UK registered doctors.

Dosage

250mg

500mg

Package Size



2 TABLETS

£39.95



## Just some more questions about your condition

**Please select the STI you or your partner is currently suffering from:**

- |   |  |
|---|--|
| <input type="checkbox"/> Chlamydia                                | <input type="checkbox"/> Genital Warts         |
| <input type="checkbox"/> Genital Herpes or Shingles or Cold Sores | <input type="checkbox"/> Bacterial vaginosis   |
| <input checked="" type="checkbox"/> Non-specific urethritis (NSU) | <input type="checkbox"/> Mycoplasma genitalium |
| <input type="checkbox"/> Trichomonas vaginalis                    | <input type="checkbox"/> Ureaplasma            |
| <input type="checkbox"/> Other: <input type="text"/>              |  |

Have you tested positive for the infection(s) selected above?

No

Yes

**Please check the symptoms you are suffering from**

- |  |  |
|--|--|
| <input type="checkbox"/> Penile discharge              | <input type="checkbox"/> Irritation on head of penis                         |
| <input type="checkbox"/> Burning sensation             | <input type="checkbox"/> Rashes  |
| <input type="checkbox"/> Itching                       | <input type="checkbox"/> Vaginal or urethral discharge                       |
| <input type="checkbox"/> Unpleasant smell              | <input type="checkbox"/> Pain in the lower abdominal area                    |
| <input type="checkbox"/> Fleshy lumps on your genitals | <input checked="" type="checkbox"/> Other: <input type="text" value="none"/> |

## Welcome to our secure checkout



Card Number

Card Holder Name

Card Expiry Date

 / 

CVC/CVV/CID

What is CVC/CVV/CID?

**Complete Order**



# Diagnosis and treatment of chlamydia and gonorrhoea in general practice in England 2000–2011: a population-based study using data from the UK Clinical Practice Research Datalink

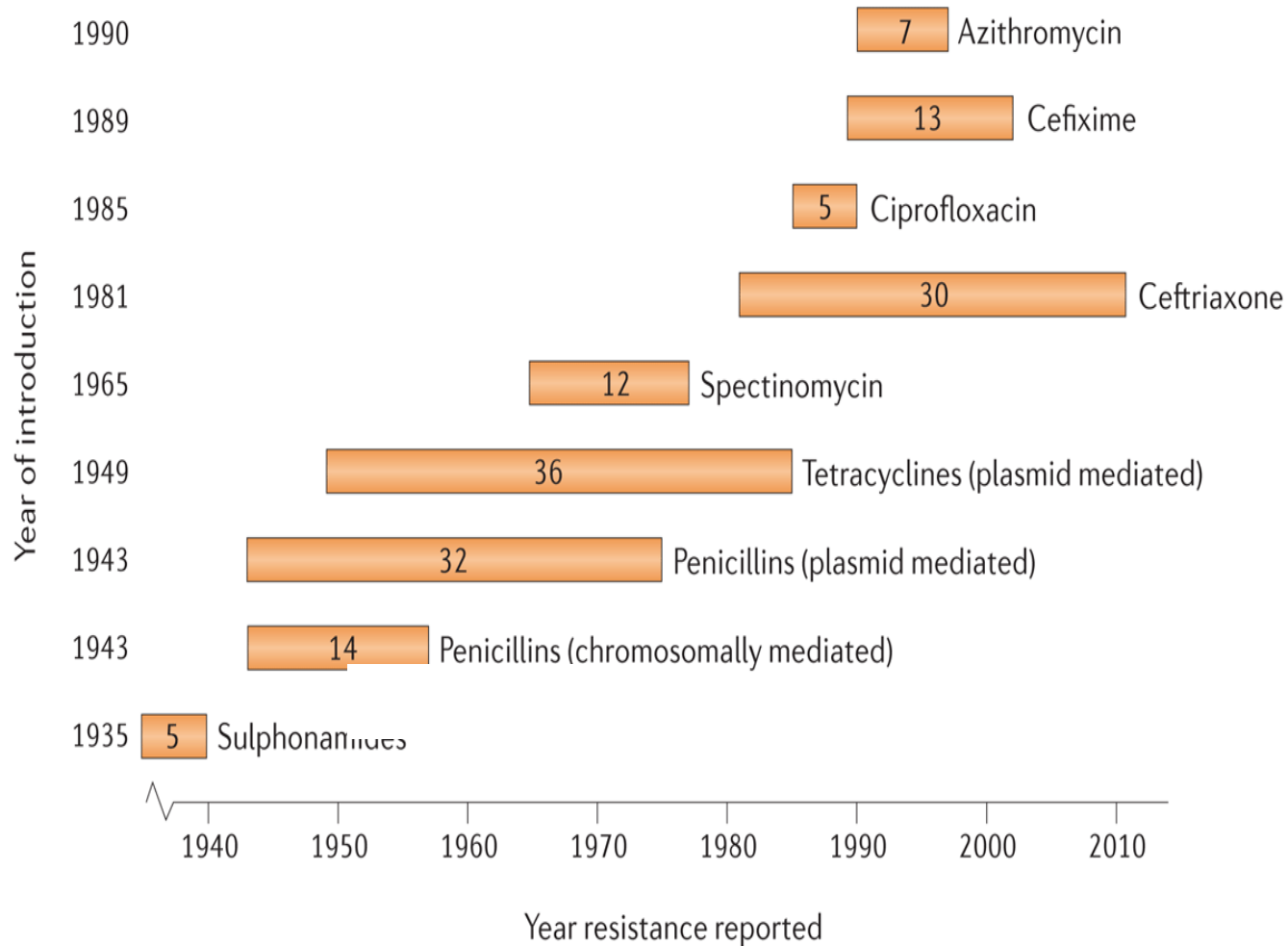
Sally Wetten<sup>1</sup>, Hamish Mohammed<sup>1</sup>, Mandy Yung<sup>1</sup>, Catherine H Mercer<sup>2</sup>, Jackie A Cassell<sup>3, 4</sup>, Gwenda Hughes<sup>1</sup>

*BMJ Open* 2015



GPs diagnose 9-16% chlamydia and gonorrhoea  
20% treatment for gonorrhoea were with ciprofloxacin

# A history of treatment for *N. gonorrhoeae*



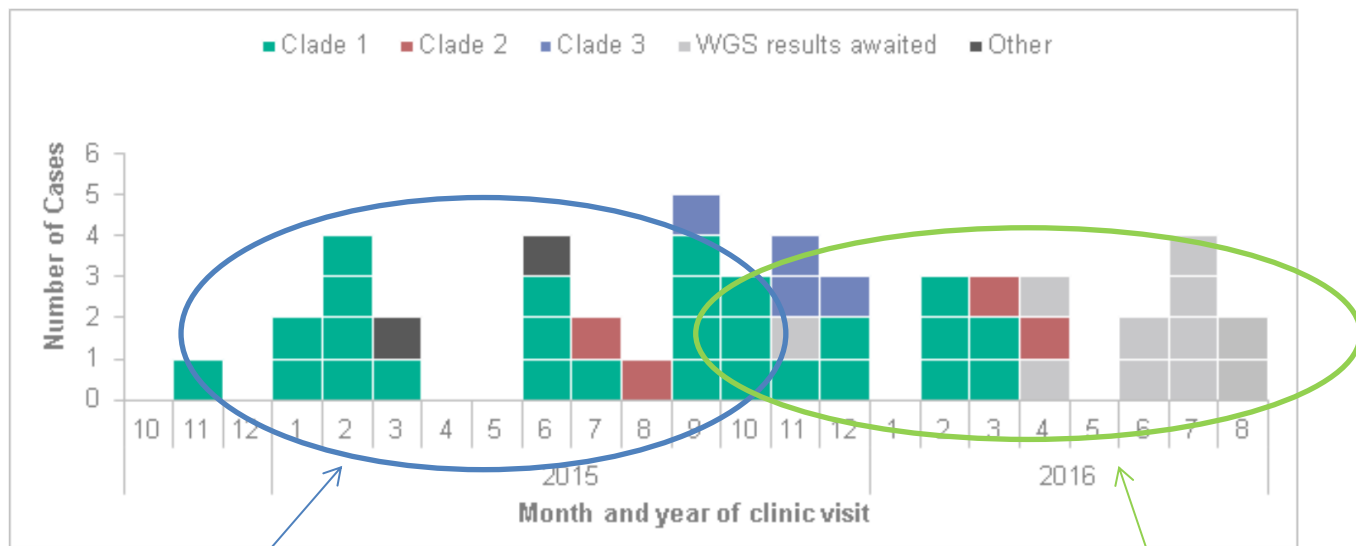
# GRASP 2015

## (Gonococcal Resistance Antimicrobial Surveillance Programme)

Cefixime	1%
Azithromycin	10%
Penicillin	24%
Ciprofloxacin	39%
Tetracycline	39%

World's first treatment failure with **ceftriaxone** (MIC 0.25 mg/L) and **azithromycin** (MIC 1.0 mg/L)

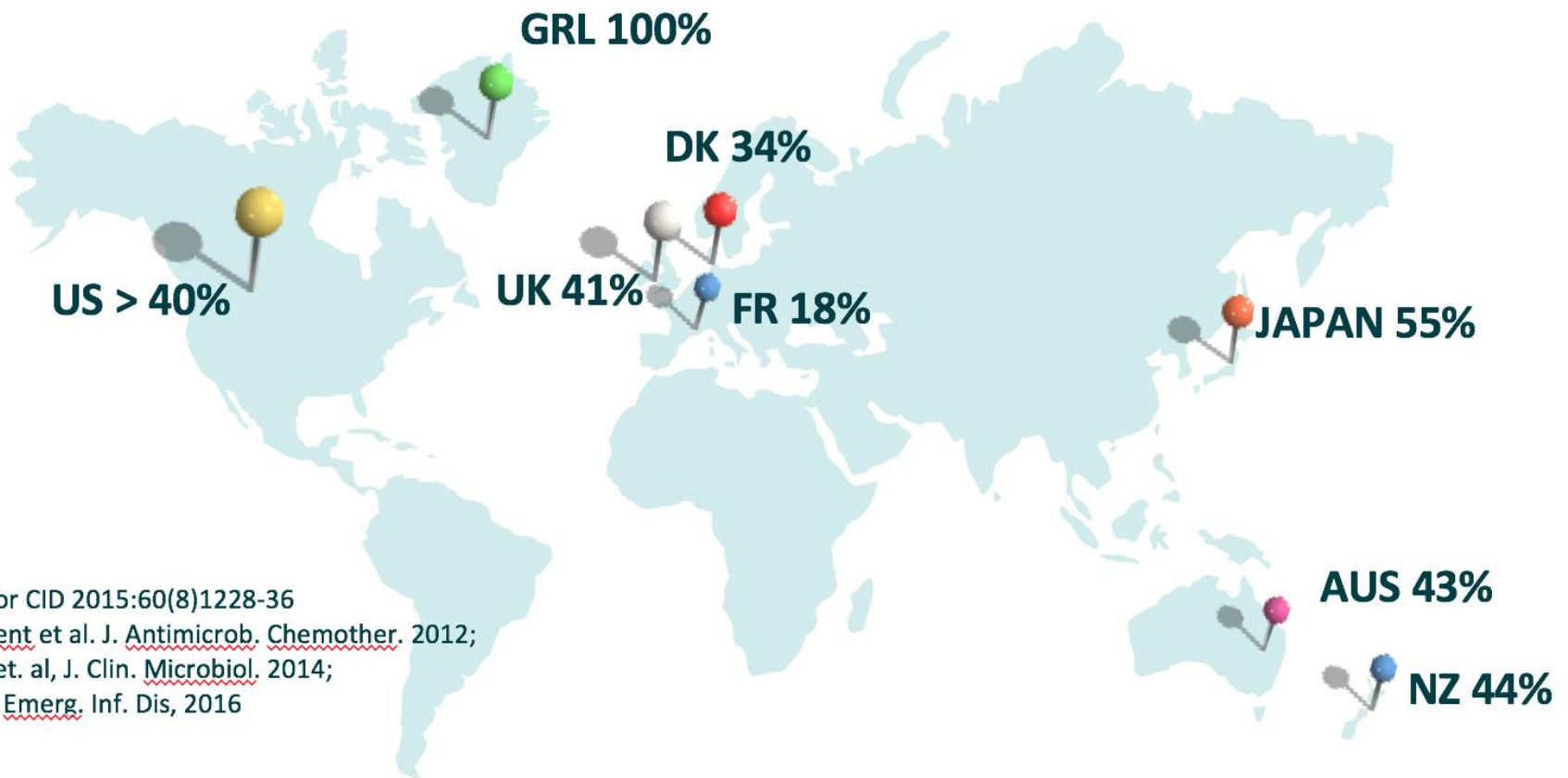
# Outbreak of high level azithromycin resistant *N. gonorrhoeae* in England (MIC>256mg/L)



Heterosexual men and women in Leeds aged <20

MSM in London/SE aged 18-31

# *M. genitalium* macrolide resistance



Bissessor CID 2015;60(8)1228-36

Chrismont et al. J. Antimicrob. Chemother. 2012;

Touati et. al, J. Clin. Microbiol. 2014;

Le Roy, Emerg. Inf. Dis, 2016

Quinolone resistance      mostly in Asia-Pacific  
rare in Europe <5%  
reports of dual macrolide and quinolone resistance

[Clin Infect Dis](#). 2014 Mar 1; 58(5): 631–637.

PMCID: PMC3922211

Published online 2013 Nov 26. doi: [10.1093/cid/cit752](https://doi.org/10.1093/cid/cit752)

## High Prevalence of Antibiotic-Resistant *Mycoplasma genitalium* in Nongonococcal Urethritis: The Need for Routine Testing and the Inadequacy of Current Treatment Options

[Marcus J. Pond](#)<sup>1</sup>, [Achyuta V. Nori](#)<sup>1,2</sup>, [Adam A. Witney](#)<sup>1</sup>, [Rose C. Lopeman](#)<sup>1</sup>, [Philip D. Butcher](#)<sup>1</sup> and [Syed Tariq Sadiq](#)<sup>1,2</sup>

## Macrolide Resistance and Azithromycin Failure in a *Mycoplasma genitalium*–Infected Cohort and Response of Azithromycin Failures to Alternative Antibiotic Regimens FREE

Melanie Bissessor ✉; Sepehr N. Tabrizi; Jimmy Twin; Houda Abdo; Christopher K. Fairley; Marcus Y. Chen; Lenka A. Vodstrcil; Jorgen S. Jensen; Jane S. Hocking; Suzanne M. Garland; ... [Show more](#)

*Clin Infect Dis* (2014) 60 (8): 1228–1236.

## Failure of moxifloxacin treatment in *Mycoplasma genitalium* infections due to macrolide and fluoroquinolone resistance

[Deborah L Couldwell](#), [Kaitlin A Tagg](#), [Neisha J Jeoffreys](#), [Gwendolyn L Gilbert](#)

First Published August 29, 2013 | research-article

[J Antimicrob Chemother](#). 2014 Sep;69(9):2376–82. doi: [10.1093/jac/dku164](https://doi.org/10.1093/jac/dku164). Epub 2014 Jun 2.

## Remarkable increase in fluoroquinolone-resistant *Mycoplasma genitalium* in Japan.

[Kikuchi M](#)<sup>1</sup>, [Ito S](#)<sup>2</sup>, [Yasuda M](#)<sup>1</sup>, [Tsuchiya T](#)<sup>1</sup>, [Hatazaki K](#)<sup>1</sup>, [Takanashi M](#)<sup>3</sup>, [Ezaki T](#)<sup>4</sup>, [Deguchi T](#)<sup>5</sup>.



# Concurrent detection of Antimicrobial resistance (AMR)



**Resistance**Plus™ MG

CE Marked - *M. genitalium*  
detection plus mutations  
conferring macrolide resistance  
Quinolone resistance assay in  
development

PRECISE

rapid testing, guiding treatment

Rapid detection of *M. gen* and  
GC with detection of resistance  
Phase 3 studies

# *C. trachomatis*: azith 1g v doxy 7 days

## **Genital infection**

3% increased benefit of doxycycline over azithromycin for urogenital chlamydia

*Kong et al Clin Infect Dis 2014*

*The NEW ENGLAND JOURNAL of MEDICINE*

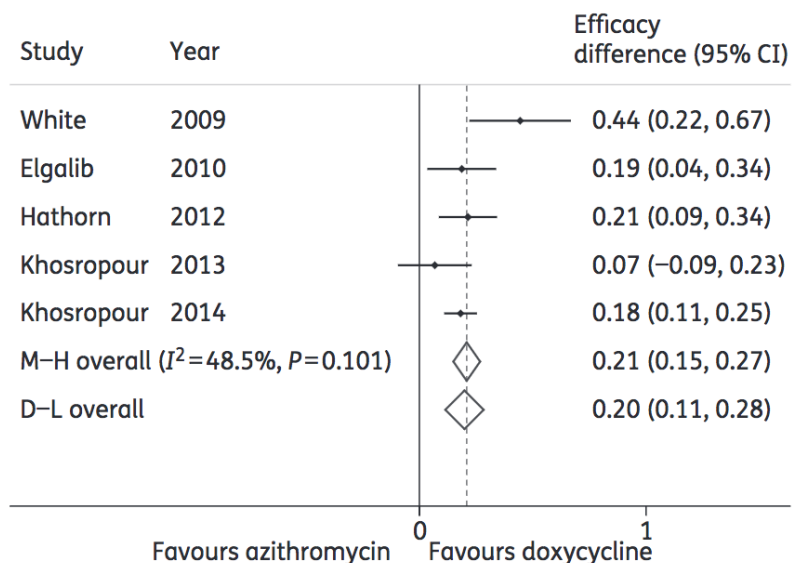
RCT: Azithromycin versus doxycycline for urogenital *C. trachomatis* infection

- Efficacy azithro 97%, doxycycline 100%
- 4 treatment failures in azith arm

*Geisler WM et al N Engl J Med 2015*

# *C. trachomatis*: azith 1g v doxy 7 days

## Rectal infection



Pooled efficacy:

Azithromycin 82.9%

Doxycycline 99.6%



British Association for  
Sexual Health and HIV

# Chlamydia guidelines 2015

## Uncomplicated urogenital and pharyngeal infection

Doxycycline 100mg bd for 7 days

Or

Azithromycin 1g single dose

## Rectal infection (non-LGV)

Preferred treatment

Doxycycline 100mg bd for 7 days

Alternative treatment

Azithromycin 1g single dose

# Systematic review: similar rates of non-genital CT in women and MSM

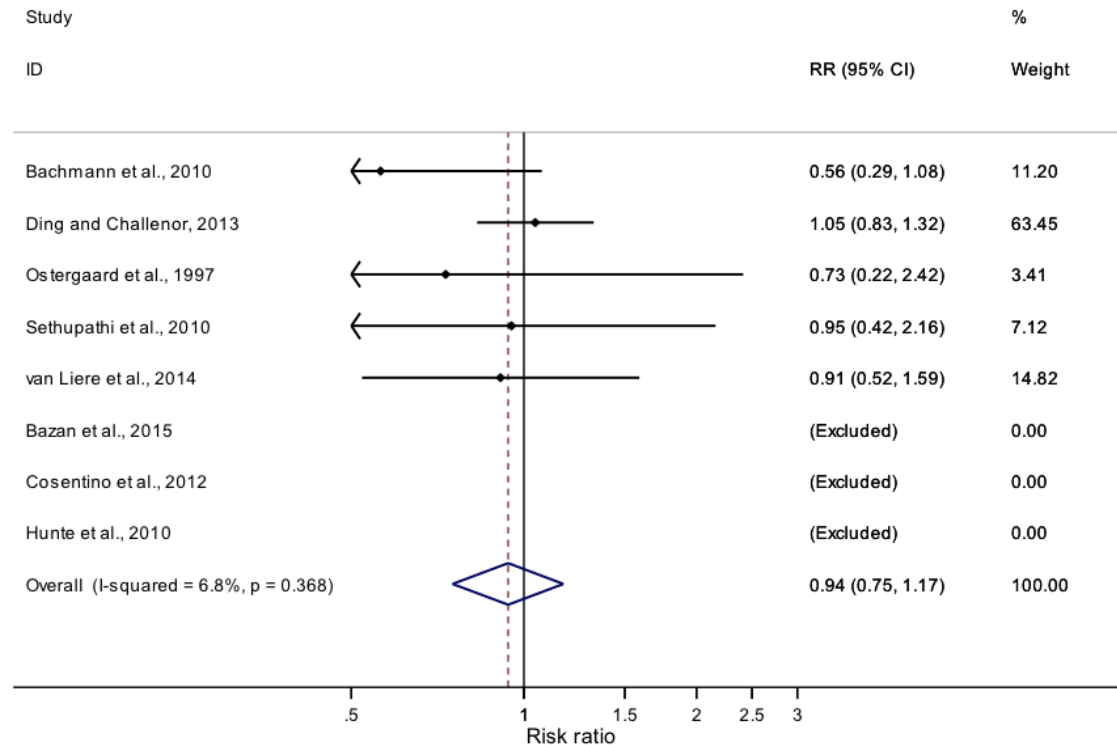
	Women		Men who have sex with men		
	CT	NG	CT	LGV (of CT+)	NG
Pharyngeal	1–3 %	1–2 %	1–3 %	9–16 %	4–12 %
Anorectal	7–17 %	0–3 %	1–18 %	2–16 %	6–21 %
Genital	5–13 %	1–2 %	3–8 %	2 %	3–11 %



## A systematic review and meta-analysis: How common is rectal *Chlamydia trachomatis* Infection in women?

History of anal intercourse NOT  
a reliable indicator of rectal CT  
risk

## Individual and pooled estimates for the risk ratio of rectal chlamydia infection and a history of anal intercourse



# Smart antibiotic prescribing

Does everyone with NGU need treating with doxycycline?

Consider withholding treatment for GC contacts if asymptomatic, low risk exposure or no other partners

Where GC sensitivities are known, use alternatives to ceftriaxone

Sample 0017U023955 (GC Plate) Collected 06 Feb 2017 17:02 Received 07 Feb 2017 13:45

**M, C & S**

**ASSAY REQUESTED**

CULTURE AND SENSITIVITY (Plate supplied)

**Anatomical Site**

Rectum

**CULTURE**

1) *Neisseria gonorrhoeae*

	1)
Azithromycin	S
Cefixime	S
Ceftriaxone	S
Penicillin	R
Ciprofloxacin	S

# Smart antibiotic prescribing



Use doxycycline for:

NGU

Chlamydia at all sites

epidemiological treatment of NGU,  
CT, PID, epididymo-orchitis



# Smart antibiotic prescribing?



PEP with doxycycline 200mg <72hours for  
MSM taking PrEP

28 infections in the PEP group  
(37.7 per 100 person-years)

45 in the no-PEP group  
(69.7 per 100 person-years)

P=0.007

Future studies should include monitoring for AMR

# Summary

1. Despite our efforts, rates of STIs are at an all time high. HIV and STI services together
2. Online testing gaining momentum, asymptomatics may also be high risk
3. More sensitive rapid tests. Positive results should be accompanied by AMR testing

# Summary

## 4. Antimicrobial resistance

Bacterial STIs are evolving into superbugs

Overuse and misuse of antibiotics

Efforts to monitor AMR

Practicalities  
and cost



Antibiotic  
stewardship

# Acknowledgements

Lawson unit colleagues, Brighton

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John Saunders, PHE