Potential Impact of Decreased STI Screening and Partner Treatment and DoxyPEP on Antibiotic Use in MSM

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BACKGROUND

- Some public health authorities are advocating the discontinuation of gonorrhea (GC) and chlamydial (CT) screening and the empiric treatment sex partners of persons with GC and CT as measures to decrease antimicrobial use.
- DoxyPEP use is rising rapidly among men who have sex with men (MSM).
- **Objective: To estimate how the introduction of doxyPEP and changing practices related to STI screening and the empiric treatment of persons exposed to STIs might affect population-levels of antibiotic use among MSM.**

METHODS

Model

- Excel-based static, linear model
  - Number partners empirically treated estimated based on estimated positivity among partners
  - Number cases identified via screening defined as asymptomatic cases not tested because of a partner with STI

Data for parameters

- Cases of GC and CT in MSM in 2022 (pre-doxyPEP) based on public health case reports in King County, WA, USA
  - Case reports include data on sex partner gender, anatomic site, reason for testing (symptomatic, asymptomatic contact to STI, asymptomatic diagnosed through screening)
- Number of cases of non-CT, non-GC urethritis (NCNGU) estimated based on ratio of CT urethritis to NCNGU in PHSKC

4 modelled scenarios

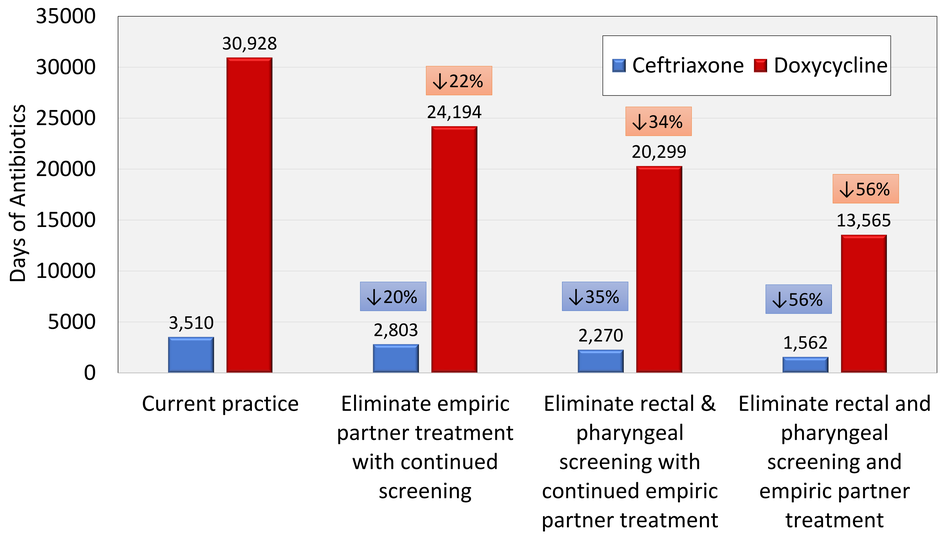
- Current practice without doxyPEP – continued GC/CT screening & empiric treatment of sex partners
- Antimicrobial stewardship without doxyPEP – discontinuation of screening and empiric treatment of sex partners (partners treated if test positive)
- Current practice with doxyPEP
- Antimicrobial stewardship with doxyPEP

Parameter	Estimate
DoxyPEP Use[1]	30% MSM use 3x/month
Impact of DoxyPEP on STIs[2]	↓CT 60% No impact GC, NGNCU
Percent of contacts that test GC or CT positive[3]	33%
Percent of men who are MSM[4]	8.5%
Total days of antimicrobial use in MSM[5]	552 days antibiotic use/1,000 person years

Changes in GC/CT screening and empiric partner treatment could substantially reduce the use of ceftriaxone and doxycycline, though widespread use of doxyPEP will dwarf the impact of such measures on doxycycline use

RESULTS

Estimated Impact of Decreased GC/CT Screening and Empiric Partner Treatment on Population-Level Use of Ceftriaxone and Doxycycline Among MSM, King County, WA, USA



Antimicrobial stewardship changes could decrease the use of ceftriaxone and doxycycline for STI by 56% relative to current practices in the absence of doxyPEP.

RESULTS

Estimated Days of Ceftriaxone & Doxycycline Use Among MSM in King County, WA, USA, with Antimicrobial Stewardship & DoxyPEP Scale-Up

	Current Practice without DoxyPEP	Antimicrobial Stewardship without DoxyPEP	Current Practice with 30% DoxyPEP Use	Antimicrobial Stewardship with 30% DoxyPEP Use
Ceftriaxone	3,511	1,562	3,511	1,562
Doxycycline	30,928	13,565	872,947	868,695

- DoxyPEP estimated to lead to a 27-fold increase in doxycycline use for STI prevention and treatment
- Based on national estimates of antimicrobial use among all men, the MSM population of King County receives approximately 290,712 days of antimicrobials annually; doxyPEP increases the population's total number of days of antimicrobials by approximately 190%.

PRIMARY LIMITATION

- Data are estimates based on public health surveillance data in a single urban area of the U.S.A.

CONCLUSIONS

- Decreased rectal and pharyngeal screening for GC/CT and limiting the empiric treatment of sex partners of MSM with GC/CT could decrease antibiotic use
- DoxyPEP – a highly effective intervention in preventing syphilis – leads a large increase in population-level use of doxycycline among MSM

REFERENCES

[1]King County 2025 Pride Survey
[2]Sankaran M. JAMA Int Med 2025
[3]Llata E. Sex Transm Dis 2025
[4]Behavioral Risk Factor Surveillance Survey, King County, WA 2023
[5]CDC, Outpatient Antibiotic Prescriptions – U.S., 2022

ADDITIONAL INFORMATION

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