Syndromic management of common sexual and reproductive tract infections

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Date: Sept 21, 2020

Date modified: November 11, 2021

Interventions included in this evidence brief are:

1. Treatment of urinary tract infection (UTI)

2. Treatment of syphilis

3. Treatment of gonorrhoea

4. Treatment of chlamydia

5. Treatment of trichomoniasis

6. Treatment of PID (Pelvic Inflammatory Disease)

7. Partner notification STIs (including HIV)

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(DCP4 ID: HIVSTI05-01,02,03,04,05,0,07)
Cluster: HIVSTI

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Description of condition and intervention

The World Health Organization (WHO) global health sector strategy for sexually transmitted infections (STIs) for 2016-2021 aims to eliminate STIs as a public health threat by the year 2030. Recent estimates by WHO in 2016 reported 127.2 million new cases of chlamydia, 86.9 million new cases of gonorrhoea, 156 million new cases of trichomoniasis and 6.3 million new cases of syphilis. Syndromic management of STIs remain the mainstay approach as standard of care in resource-limited settings. These guidelines help in providing treatment and care through their standard flowcharts to diagnose and manage symptomatic STIs especially in settings where lab infrastructure is not well-developed.

Various STIs included under this intervention are urinary tract infections, syphilis, gonorrhoea, chlamydia, trichomoniasis, pelvic inflammatory disease, partner notification STIs (including HIV). Syphilis can occur in those patients who are HIV-positive and has implications for clinical assessment and management. The recommendations for treatment are similar in early syphilis in HIV-positive and non-HIV positive patients, However, syphilis in pregnancy warrants close follow up and infants born to sero-positive mothers need to be checked and accordingly treated for congenital syphilis. Chlamydia trachomatis is one of the major pathogens causing urethral discharge, scrotal swelling, neonatal conjunctivitis, and warrants treatment as part of the syndromic management strategy. Treatment options include doxycycline and azithromycin (WHO 2001).

International guidelines

Organization	Indications/recommendations	Applicability in LIC & Lower MIC settings
World Health Organization (WHO 2001)	The recommended regimen for early syphilis (primary, secondary, or latent syphilis of not more than two years' duration) is benzathine benzylpenicillin 2.4 million IU in a single session through intramuscular route. Alternatively, procaine benzylpenicillin 1.2 million IU daily by intra-muscular injection for 10 consecutive days. In case of late latent syphilis, benzathine benzylpenicillin, 2.4 million IU by intramuscular injection, once weekly for 3 consecutive weeks is recommended.	
	The recommended drug options for gonorrhea are ciprofloxacin, azithromycin, ceftriaxone, cefixime, spectinomycin.	

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	The recommended drug options for trichomonas vaginalis infection are metronidazole or tinidazole (2 grams orally in a single dose).	
World Health Organization (WHO 2021)	Guidelines for the management of symptomatic sexually transmitted infections 2021	Yes

Intervention attributes

Type of interventions & Delivery platform

Table 1: Type of interventions & delivery platform

Intervention	Type	Delivery platform
1. Treatment of urinary tract infection (UTI)	Curative	Health centre
2. Treatment of syphilis	Curative	Health centre
3. Treatment of gonorrhoea	Curative	Health centre
4. Treatment of chlamydia	Curative	Health centre
5. Treatment of trichomoniasis	Curative	Health centre
6. Treatment of PID (Pelvic Inflammatory Disease)	Curative	Health centre
7. Partner notification STIs (including HIV)	Prevention	Health centre

Equity

In addition to considerations like cost-effectiveness and health systems factors, dimensions of equity can be relevant for priority setting. The opportunity for a long and healthy life varies according to the severity of a health condition that individuals might have, so there are inequities in individuals' opportunities for long and healthy lives based on the health conditions they face. Metrics used to estimate the severity of illness at an individual level can be used to help prioritize those with less opportunity for lifetime health. FairChoices: DCP Analytics Tool uses Health adjusted age of death (HAAD), which is a metric that estimates the number of years lived from birth to death, discounting years lived with disability. A high HAAD thus represents a disease less severe in terms of lifetime health loss, while a low HAAD represents a disease

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that is severe on average, causing early death or a long period of severe disability. It is also possible to estimate the distribution of HAAD across individuals with a health condition. FairChoices shows for each intervention an average HAAD value of the conditions that are affected by respective interventions that have health effects. Additionally, a plot shows HAAD values for around 290 conditions (Johansson KA et al 2020).

Time dependence

Moderate level of urgency. Treatment outcomes not highly affected by some days of delay.

Population in need of interventions

Table 2: Population in need of interventions

Intervention	Treated population		Affected population	
	Treated age	Treated fraction	Affected age	Affected fraction
1. Treatment of urinary tract infection (UTI)	0 to 99 years, both genders; incidence based	1	0 to 99 years, both genders; incidence based	1
2. Treatment of syphilis	0 to 99 years, both genders; incidence based	1	0 to 99 years, both genders; incidence based	1
3. Treatment of gonorrhoea	0 to 99 years; both genders; incidence based	1	0 to 99 years; both genders; incidence based	1
4. Treatment of chlamydia	0 to 99 years; both genders; incidence based	1	0 to 99 years; both genders; incidence based	1
5. Treatment of trichomoniasis	0 to 99 years; females;	1	0 to 99 years; females;	1

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	incidence based		incidence based	
6. Treatment of PID (Pelvic Inflammatory Disease)	0 to 99 years years; females; incidence based	1	0 to 99 years years; females; incidence based	1
7. Partner notification STIs (including HIV)	15 to 99 years; both genders; prevalence based	0.8	15 to 99 years; both genders	1

Disease state addressed

The included interventions target conditions like urinary tract infections, gonococcal infection, chlamydial infection, trichomoniasis, pelvic inflammatory infections and trichomoniasis.

Intervention effect and safety

Table 3: Effect and safety of interventions

Effect of intervention		Certainty of evidence
Incidence Partner notification STIs (including HIV)	The review (Ferreira, Young, Mathews, Zuna, Low 2013) found moderate-quality evidence that expedited partner therapy is better than simple patient referral for preventing reinfection of index patients when combining trials of STIs that caused urethritis or cervicitis RR 0.71 (0.56-0.89). When studies with attrition greater than 20% were excluded, the effect of expedited partner therapy was attenuated RR 0.8 (0.62-1.04)	See appendix
Mortality	0.92 (RRR assumed)	

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Treatment of urinary tract infections, syphilis, gonorrhoea, chlamydia, trichomoniasis, PID		

RRR=Relative risk reduction

Model assumptions

Table 4: Summary of model parameters and values used in FairChoices – DCP Analytical Tool

Category	Model parameter	Notes
Intervention	Mass media encouraging use of condoms, voluntary medical male circumcision, and STI testing Voluntary medical male circumcision service in settings with high prevalence of HIV Provision of condoms to MARPS PrEP for discordant couples and others at high risk of HIV (in high prevalence settings) Prevention of mother to child HIV transmission (PMTCT, option B+) and syphilis	
Cost calculation		
Treated population	See Table 1	Epidemiological data from Global Burden of Disease Study 2019
Effect calculation		
Affected population	See Table 1	
Affected fraction		
Comparison	No intervention	
Incidence reduction Partner notification STIs (including HIV) Mortality reduction All listed conditions in table 3	RRR=0.2 RRR=0.92 (assumed) with the intervention	(Ferreira, Young, Mathews, Zuna, Low 2013)

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Intervention cost

The cost for syndromic management of common sexual and reproductive tract infections including syphilis, gonorrhea, chlamydia and, trichomoniasis is estimated to be $6.24, 6,67, 1.11, and 0.94 per incident case in 1999 USD in Nicaragua (Borghi, Gorter, Sandiford, Segura 2005).

References

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Appendix

Literature Review for effectiveness & safety

This literature search is an example of Level 1 search for intervention inputs taken from DCP3 or generated in an ad hoc manner (e.g., quick google search found one study of cervical cancer screening cost-effectiveness that was used to create an effectiveness parameter for that intervention).

Level of evidence of efficacy studies:

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1. low (expert opinions, case series, reports, low-quality case control studies)

2. moderate (high quality case control studies, low quality cohort studies)

3. high (high quality cohort studies, individual RCTs)

4. very high (multiple RCTs, metaanalysis, systematic review, clinical practice guidelines)