

Estimating the global burden of sexually transmitted infections

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Yang Zheng and colleagues re-analysed estimates from the Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) 2019 and report age-standardised incidence rates and disability-adjusted life-years (DALYs) caused by five sexually transmitted infections (STIs)— syphilis, gonorrhoea, chlamydia, trichomoniasis, and genital herpes—from 1990 to 2019.¹ We urge caution in the use and interpretation of the results.

First, the overall burden of disease reported, 1·31 million DALYs (95% uncertainty interval [UI] 0·80–2·20), is a large underestimate because the analysis is restricted to people aged 10 years and older. The GBD 2019 database for all ages reports 8·22 million DALYs for the five STIs, of which 7·26 million are years of life lost due to congenital syphilis. In fact, the total burden of disease for these five STIs is even higher than the GBD database reports, because GBD estimates do not account for an estimated 7·7% (95% UI 4·6–12·0) of stillbirths worldwide that are caused by syphilis,² the consequences of congenital herpes simplex virus, pregnancy-specific effects of other STIs, or the impact of STIs on HIV transmission.^{3, 4} All of these adverse outcomes disproportionately affect low-income and middle-income countries.

Second, data underlying the GBD 2019 are themselves subject to limitations, which are a source of uncertainty.⁵ STI incidence estimates are based on a small number of prevalence studies, most of which include only women and use heterogeneous sampling and data collection methods. Prevalence data are combined with assumptions about disease remission, a robust database for cause-specific mortality, and Bayesian regression methods to produce estimates for all locations, even where data are absent.

Third, Zheng and colleagues conclude that age-standardised STI incidence rates declined from 1990 to 2019. Although the global estimated annual percent change (EAPC) is negative, its 95% UI includes zero, which is compatible with stable levels. Furthermore, the EAPC summarises changes over a 29-year period, but country-by-country review of full time-series estimates reveals many countries with increases in age-standardised incidence in the past 5 years. Lastly, although the numbers of incident cases reported do align with the GBD tool, it is unclear why age–group-specific incidence rates are much higher than in GBD, and why the 10–24 years age group has the highest numerical STI rates.

Complete and reliable STI burden estimates are essential for global investment, policy development, and programme implementation. Limitations of existing GBD estimates should be acknowledged. Efforts to provide a more comprehensive estimation of STI health impact and to close gaps in primary data are urgently needed.

NL is on the scientific board of Sefunda, a start-up company that develops point-of-care diagnostics for STIs. RPHP, RMC, and JR declare no competing interests. We thank Maegan Dirac and Hannah Han at the University of Washington (WA, USA) for checking the numerical results presented in Zheng and colleagues' study and this Correspondence.

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