WWW.PATH.ORG

PATH

Sexually transmitted infections

An unfinished agenda for women and adolescent girls' health and well-being

A new era of global health and development driven by the Sustainable Development Goals (SDGs) offers a fresh opportunity to address sexually transmitted infections (STIs), a critical—but overlooked—health issue affecting women and adolescent girls. Given the devastating consequences of STIs for reproductive, maternal, newborn, child, and adolescent health (RMNCAH), global institutions and donors have a responsibility to elevate and address this epidemic. Yet today, STIs—especially bacterial infections such as chlamydia, gonorrhea, and syphilis—are not a major priority among most global and national decision-makers and advocates. A set of targeted and focused policy actions could spur progress on reducing the incidence and prevalence of STIs and improve the health of women and girls worldwide.

A NEGLECTED GLOBAL BURDEN

Chlamydia, gonorrhea, and syphilis represent a large global disease burden, especially for women and adolescent girls. The World Health Organization (WHO) estimates that there are 214 million new cases of chlamydia, gonorrhea, and syphilis globally each year.[1] All three of these bacterial infections can be passed from a pregnant woman to her baby. Left untreated, they each can cause significant damage to the reproductive system and/or increase risk of adverse outcomes in pregnancy, childbirth, and newborn health. Depending on the infection, these may include pelvic inflammatory disorder, infertility, miscarriage, premature birth, low birth weight, postpartum infections, and fetal death. As many as one-third of pregnant women infected with gonorrhea, for example, experience either miscarriage or preterm birth, and untreated syphilis infections result in adverse outcomes such as stillbirths or neonatal deaths in more than one-third of those cases.[2,3] Moreover, chlamydia, gonorrhea, and syphilis can increase a woman's risk of acquiring or transmitting HIV by severalfold.[4,5,6]

In spite of their tremendous health burden, bacterial STIs have been historically underrepresented in high-level global policy discussions and agendas. This is beginning to change, as evidenced by WHO's recently released

PATH/Gabe Bienczycki

Global Health Sector Strategy on Sexually Transmitted Infections 2016-2021 and updated guidelines on treatment and syndromic case management.[7,8] However, many factors continue to hold back STIs from being a global priority. These include limited integration of STIs in RMNCAH and HIV/AIDS policy and programming, poor data collection and surveillance, and weak investments in research and development (R&D) for urgently needed technologies to prevent, diagnose, and treat STIs.

BARRIERS TO ADVANCING THE GLOBAL STI RESPONSE

Integration

Chlamydia, gonorrhea, and syphilis are clearly linked to RMNCAH and HIV/AIDS. Despite this, policies, programming, and funding for these health areas are often fragmented, even though evidence suggests that integrating STIs into RMNCAH and HIV/AIDS programming can improve STI prevention and control efforts, as well as the quality and effectiveness of RMNCAH and HIV/AIDS services.[9,10,11]

In global policymaking on RMNCAH and HIV/AIDS, STIs are often overlooked or referenced unevenly. For example, The Global Strategy for Women's, Children's, and Adolescents' Health (2016-2030)—a key global plan to help implement the SDGs and mobilize country action on RMNCAH—does not include STIs in its overarching objectives to end preventable mortality and enable women, children, and adolescents to enjoy good health.[12,a] As another example, the United Nations Joint Programme on HIV/AIDS 2016-2021 strategy On the Fast-Track to end AIDS—a road map guiding the global HIV/AIDS response—acknowledges the value of incorporating syphilis screening and treatment into services for pregnant women and the need for improved STI services, but it does not fully recognize and elevate STI prevention, screening, and treatment in integrated programming.[13]

Additionally, the lack of prominent multilateral or bilateral leadership to integrate STI interventions into RMNCAH or HIV/AIDS funding dampens country prioritization. While donor agendas often influence national priorities, individual countries also have a role to play in mobilizing domestic financing for integrated health services. The Global Financing Facility (GFF) for RMNCAH, for example, offers an opportunity for countries to allocate resources to STIs; however, financing under this mechanism will only support integrated STI-RMNCAH and/or HIV/AIDS interventions if it is a domestic priority. Without a global policy mandate to address STIs, and no donor prioritization, countries are less likely to prioritize STIs in their own budgets and policies.

Surveillance

Even though more than half of countries[b] have an STI surveillance system, the availability and quality of STI data varies significantly across countries and is often not comparable, due to a lack of consistent indicators.[14] In many resource-constrained settings, STI surveillance relies on facility-based, syndromic case reporting, in which health facilities screen for and report on STI cases based on symptoms.[14] This approach is affordable and easy to implement, but it excludes asymptomatic cases—which are common with chlamydia, gonorrhea, and syphilis, particularly in women and girls. It also only captures data from participating facilities that often screen voluntarily, leaving many cases uncounted.

While progress on national and global data collection has been made, much of the gains have been for syphilis, while gonorrhea and chlamydia have lagged further behind. The availability, quality, and comparability of data on syphilis, particularly among pregnant women, has improved significantly in recent years. This is due in part to the introduction of rapid diagnostic tests (RDTs) and the incorporation of syphilis indicators in national and global surveillance systems, including HIV/AIDS antenatal care sentinel surveys and the HIV Universal Access and Global AIDS Response

a STI interventions are, however, referenced in the annex on evidence-based interventions for women's, children's, and adolescents' health.

b Of the countries surveyed by WHO in 2013, 108 of 198 reported having an STI surveillance system. Yet, of the 47 African region countries surveyed, only 20 countries responded that they had an STI surveillance system.

Progress Reporting (GARPR) system. In 2013, the GARPR incorporated additional indicators on prevalence of syphilis, gonorrhea, and common STI symptoms (urethral discharge and genital ulcer disease), representing a positive step forward for syphilis and gonorrhea data collection.[14] Globally accepted indicators on chlamydia, however, do not exist. Additional research is needed to determine the most effective interventions for surveillance and control of chlamydia, especially in the absence of easy-to-use diagnostics in low-resource settings.[15]

Improving testing and surveillance through the Dual Testing and Elimination of Congenital Syphilis (DTECS) project (2012–2014)

The DTECS project demonstrates the importance, and impact, of improved STI surveillance. The goal of DTECS, a joint project of PATH and WHO that was funded by the Bill & Melinda Gates Foundation, was to work in three countries—India, Nigeria, and Zambia—to reduce adverse outcomes for pregnant women and newborns due to mother-to-child transmission of syphilis by (1) strengthening the evidence base through synthesis of current knowledge and estimation of the burden of disease, (2) analyzing previous attempts to eliminate congenital syphilis and using the lessons learned to improve the enabling environment to support elimination of congenital syphilis, and (3) analyzing country-level readiness and developing scenarios, including costs associated with testing and treatment, for eliminating congenital syphilis. Key project activities, especially those associated with the development of country investment cases for scale-up, produced notable results, especially with data and surveillance. For example, in Nigeria, the project helped reinstate syphilis indicators into the country's antenatal care HIV sero-prevalence sentinel survey.[16]

RESEARCH, DEVELOPMENT, AND SCALE-UP OF NEW TECHNOLOGIES

One of the biggest challenges in the global response to chlamydia, gonorrhea, and syphilis is the dearth of effective technologies to prevent and diagnose the infections in low-resource settings. And while the three STIs are curable with antibiotics, global medicine shortages and the threat of antimicrobial resistance pose additional barriers to treatment.

New options for prevention of chlamydia, gonorrhea, and syphilis infection are greatly needed, especially where women and adolescent girls struggle to negotiate male and female condom use. Vaccines and microbicide gels to prevent the three STIs are not commercially available, though some are in development—including several chlamydia vaccine candidates.

RDTs to identify STIs early are critical for resource-constrained settings because they do not require laboratory equipment, trained technicians, refrigerators, or electricity, and they facilitate same-day testing and treatment. However, chlamydia and gonorrhea testing remain reliant on laboratory-based testing. For example, existing point-of-care urine tests for chlamydia are expensive and require laboratory facilities, electricity, and Internet, limiting their utility in low-resource settings.[17] And while RDTs that test for syphilis alone or jointly for HIV and syphilis are available, countries have been slow to integrate them into their policies and programs.

More work needs to be done to ensure a secure global supply of existing antibiotics to treat bacterial STIs while simultaneously developing new antibiotics in light of growing resistance. Although a single dose of long-acting intramuscular benzathine penicillin can cure syphilis and prevent mother-to-child transmission, stockouts are common.[18] Gonorrhea has developed resistance to several classes of antibiotics, and strains resistant to the last line of treatment have been reported. Despite the urgent need, no new drugs for gonorrhea are on the horizon.[19]

RECOMMENDATIONS AND CRITICAL NEXT STEPS

Integrate STIs into global and national RMNCAH and HIV/AIDS strategies, guidance, and funding opportunities.

Global bodies should strategically integrate interventions to prevent, diagnose, treat, and monitor STIs into new and existing global strategies and normative guidance as a critical component of RMNCAH and HIV/AIDS programming. Bilateral and multilateral donors should prioritize funding for comprehensive STI services as part of integrated programming and should widely publicize these funding opportunities to countries. At the same time, national governments should also elevate and integrate STI interventions into national and subnational policies and budgets, as well as country-driven financing mechanisms like the GFF.

Strengthen STI national and global surveillance systems to ensure the availability of data to inform policymaking and programming.

United Nations agencies and donors should increase technical assistance and capacity-building to enhance STI data collection. WHO should support countries in

establishing and improving STI surveillance systems and in integrating RDTs into such systems in countries where they are available. WHO should also lead the development of standardized indicators on chlamydia, gonorrhea, and syphilis prevalence, incidence, testing, and treatment coverage, as well as antimicrobial resistance patterns, and encourage the inclusion of these indicators in routine national and global surveillance systems.

Increase investment for the research, development, introduction, and scale-up of technologies to prevent, detect, and treat STIs, especially those designed for low-resource settings.

Public- and private-sector leaders must provide robust financing for STI R&D, bearing in mind the urgent need for technologies that are appropriate for use in resource-constrained areas. For example, additional research must be done to explore the potential of and develop vaccine candidates for the three STIs as well as easy-to-use RDTs for gonorrhea and chlamydia. WHO should maintain focus on addressing global shortages of benzathine penicillin, and product developers should continue prioritizing R&D for new antibiotics to treat gonorrhea, including those that are safe for use in pregnant women and newborns.

CONCLUSION

STIs continue to place a devastating health burden on women and adolescent girls, but the global health community has yet to fully respond. The SDGs provide a strong framework to address this overlooked crisis, through actions focused on integrated policies and programming, stronger surveillance, and dedicated R&D. Advocates, implementers, funders, and governments must come together to address the neglected STI crisis. Only then can we meet the SDGs and ensure a healthier life is in reach for women and adolescent girls around the world.

REFERENCES

1 Sexually transmitted infections (STIs) page. World Health Organization (WHO) website. Available at www.who.int/mediacentre/factsheets/fs110/en/. Accessed September 10, 2016.

2 Woods CR. Gonococcal infections in neonates and young children. *Seminars in Pediatric Infectious Diseases*. 2005;16(4):258–270. doi:10.1053/j.spid.2005.06.006.

3 Wijesooriya NS, Rochat RW, Kamb ML, et al. Global burden of maternal and congenital syphilis in 2008 and 2012: a health systems modelling study. *The Lancet Global Health*. 2016;4(8):e525–e533. doi:10.1016/S2214-109X(16)30135-8.

4 WHO. *WHO Guidelines for the Treatment of Chlamydia trachomatis*. Geneva: WHO; 2016. Available at apps.who.int/iris/bitstream/10665/246165/1/9789241549714-eng.pdf?ua=1.

5 WHO. *WHO Guidelines for the Treatment of Treponema pallidum (syphilis)*. Geneva: WHO; 2016. Available at apps.who.int/iris/bitstream/10665/249572/1/9789241549806-eng.pdf?ua=1.

6 WHO. *WHO Guidelines for the Treatment of Neisseria gonorrhoeae*. Geneva: WHO; 2016. Available at apps.who.int/iris/bitstream/10665/246114/1/9789241549691-eng.pdf?ua=1.

7 WHO. *Global Health Sector Strategy on Sexually Transmitted Infections 2016–2021*. Geneva: WHO; 2016. Available at apps.who.int/iris/bitstream/10665/246296/1/WHO-RHR-16.09-eng.pdf?ua=1.

8 WHO launches new treatment guidelines for chlamydia, gonorrhoea and syphilis page. WHO website. Available at www.who.int/reproductivehealth/topics/rtis/stis-new-treatment-guidelines/en/. Accessed September 5, 2016.

9 Grosskurth HF, Todd J, Mwijarubi E, et al. Impact of improved treatment of sexually transmitted diseases on HIV infection in rural Tanzania: randomised controlled trial. *The Lancet*. 1995;346(8974):530–536. doi:10.1016/S0140-6736(95)91380-7.

10 WHO. Making the Case for Interventions Linking Sexual and Reproductive Health and HIV in Proposals to the Global Fund to Fight AIDS, Tuberculosis and Malaria. Geneva: WHO; 2010. Available at apps.who.int/iris/bitstream/10665/70186/1/WHO_RHR_10.02_eng.pdf.

11 Askew I, Berer M. The contribution of sexual and reproductive health services to the fight against HIV/AIDS: a review. Reproductive Health Matters. 2003;11(22):51–73. doi:10.1016/S0968-8080(03)22101-7.

12 Every Woman Every Child. The Global Strategy for Women's, Children's and Adolescents Health 2016-2030. Geneva: Every Woman Every Child; 2015. Available at www.who.int/life-course/partners/global-strategy/en/.

13 UNAIDS. On the Fast-Track to end AIDS. Geneva: UNAIDS; 2015. Available at www.unaids.org/sites/default/files/media_asset/20151027_UNAIDS_PCB37_15_18_EN_rev1.pdf.

14 World Health Organization. Report on global sexually transmitted infection surveillance 2015. Geneva: World Health Organization; 2016. Available at apps.who.int/iris/bitstream/10665/249553/1/9789241565301-eng.pdf?ua=1.

15 World Health Organization. Global Health Sector Strategy on Sexually Transmitted Infections 2016 –2021. Geneva: World Health Organization; 2016. Available at apps.who.int/iris/bitstream/10665/246296/1/WHO-RHR-16.09-eng.pdf?ua=1.

16 PATH. Congenital syphilis in Nigeria, Zambia, and India. Seattle: PATH; 2016. Available at www.path.org/publications/files/APP_congenital_syphillis_rpt.pdf.

17 World Health Organization. *The Point-of-Care Diagnostic Landscape for Sexually Transmitted Infections (STIs)*. Geneva: World Health Organization; 2016. Available at who.int/reproductivehealth/topics/rtis/Diagnostic_Landscape_2017.pdf?ua=1.

18 Taylor MM, Zhang X, Nurse-Findlay S, Hedman L, Kiarie J. The amount of penicillin needed to prevent mother-to-child transmission of syphilis. Bulletin of the World Health Organization. 2016;94(8):559–559A. doi:10.2471/BLT.16.173310.

19 Review on Antimicrobial Resistance. Securing New Drugs for Future Generations: The Pipeline of Antibiotics. London: Review on Antimicrobial Resistance; 2015. Available at https://amr-review.org/sites/default/files/SECURING%20NEW%20DRUGS%20FOR%20FUTURE%20GENERATIONS%20FINAL%20WEB_0.pdf.

Cover photo: PATH/Will Boase

PATH

www.path.org

PATH is the leader in global health innovation. An international nonprofit organization, we save lives and improve health, especially among women and children. We accelerate innovation across five platforms—vaccines, drugs, diagnostics, devices, and system and service innovations—that harness our entrepreneurial insight, scientific and public health expertise, and passion for health equity. By mobilizing partners around the world, we take innovation to scale, working alongside countries primarily in Africa and Asia to tackle their greatest health needs. Together, we deliver measurable results that disrupt the cycle of poor health. Learn more at www.path.org.

STREET ADDRESS
2201 Westlake Avenue
Suite 200
Seattle, WA 98121 USA

MAILING ADDRESS
PO Box 900922
Seattle, WA 98109 USA

June 2017