

POLICY BRIEF

The Hidden Threat: How Antimicrobial Resistance Undermines Sexual, Maternal and Newborn Health



The United Nations
sexual and reproductive
health agency



Permanent Mission of Sweden
to the United Nations, New York

1. Introduction

In 2019, drug-resistant bacterial infections were associated with nearly 5 million deaths¹, surpassing annual deaths linked to AIDS and malaria.² This figure reveals the global scale of bacterial antimicrobial resistance (AMR), which occurs when bacteria mutate or adapt in ways that enable them to withstand antibiotics, rendering treatments ineffective³.

Antibiotics are essential for combating bacterial infections. However, their overuse in human and animal health,⁴ widespread over-the-counter availability, and incomplete adherence to prescribed treatment regimens contribute significantly to antimicrobial resistance. The use of antibiotics exposes bacteria to selective pressure, favoring the survival and proliferation of resistant strains. These resistant strains of bacteria can infect humans. When a class of antibiotics becomes ineffective, limited alternative treatments remain, and in some cases, no other antibiotics are available, severely complicating the management of these infections. New antibiotics to keep up with the resistances are costly and time-intensive to develop, as they can have a short shelf life before new strains emerge that no longer respond to the treatment. Despite growing awareness and efforts, AMR is still rising.⁵⁶

While monitoring antibiotic use is vital to slow resistance, many people worldwide lack access to these medications. In low- and middle-income countries (LMICs), the burden of treatable infectious diseases far outweighs the AMR burden.⁷ Only 65% of people in LMICs can obtain essential antibiotics, compared to 90% in high-income countries.⁸⁹ Major barriers include unaffordable drugs, lack of regulations, and weak supply chains causing frequent stock-outs.¹⁰ Consequently, drug-resistant infections are harder to treat in LMICs and the options are often more limited when bacteria do not respond to the first lines of treatment. Substandard and falsified medicines,¹¹ comprising about 14% of available drugs,⁸ lead to treatment failures and resistance. Poor infection control and misuse of antibiotics worsen the problem, disproportionately affecting marginalized populations, making it both a health crisis and a human rights issue.

A critical aspect of this crisis remains largely overlooked: the disproportionate impact on women¹² and newborns, especially in sexual, maternal and newborn health. While often overshadowed by more visible and urgent health crises, AMR poses a growing threat to global health with devastating consequences. Without effective antimicrobials, the lives of women, newborns, and those battling infections are at greater risk, threatening decades of medical advancements. The impact of AMR deserves much greater attention, as it exacerbates existing health disparities and undermines progress towards achieving sexual and reproductive rights (SRHR) for all. The predominant focus on acute infections and siloed approaches in the fields of sexual and reproductive health and bacterial diseases hinders understanding of the complex ways in which AMR impacts these health outcomes and vice-versa. This limitation restricts the development of effective strategies to jointly address these interconnected challenges.

Rising AMR undermines progress toward key global health goals, including UNFPA's three transformative results: ending preventable maternal deaths, ending the unmet need for family planning, and ending gender-based violence and harmful practices. Without effective AMR containment, achieving the Sustainable Development Goals (SDGs) for 2030 - such as ending poverty, hunger, and ensuring healthy lives - becomes increasingly unlikely. Integrating AMR into sexual and reproductive health policies and programs is critical for combating the rising threat of AMR and achieving global health targets related to maternal and newborn health (SDG 3.1 and 3.2) and SRHR (SDG 3.7 and 5.6).

By 2050, AMR is projected to cause global economic damage similar to the 2008 financial crisis, with potential costs reaching US\$3.4 trillion annually and pushing 28 million people into extreme poverty.¹³ The economic burden includes increased healthcare costs and lost productivity. World Bank projections estimate health care costs can reach up to US\$1.2 trillion by 2050. AMR could also lead to gross domestic product losses of US\$ 1 to US\$ 3.4 trillion per year by 2030.¹³ Drug-resistant bacterial infections are putting increasing pressure on frontline healthcare workers, including midwives, by making common infections in mothers and newborns harder or impossible to treat. This takes a heavy toll on healthcare workers and overwhelms healthcare systems, especially in under-resourced settings.

Taking decisive policy action now can extend the effectiveness of antibiotics, ensuring their availability for future generations and protecting hard-won global health gains. Currently, only 49 countries have costed and budgeted national AMR action plans with monitoring mechanisms, and just 20 of these include financial provisions for implementation in their national budgets.¹⁴ Most action plans do not recognize gender inequalities, nor do they incorporate them into AMR interventions.¹⁵ Addressing these gaps is essential to ensure comprehensive and inclusive strategies that effectively tackle AMR and address its impact on sexual, maternal and newborn health.

2. Sexual Health and AMR

Current trends in sexually transmitted infections (STIs)

Key statistics: *In 2020, the World Health Organization (WHO) estimated 374 million new infections of the following four antibiotic-curable STIs: chlamydia (129 million), gonorrhoea (82 million), syphilis (7.1 million), and trichomoniasis (156 million).*¹⁶

With over 1 million new STIs each day, there is a substantial and continuous demand for antibiotics to treat infections. The misdiagnosis, inappropriate or unnecessary prescription of antibiotics often results in ineffective treatments, contributing to the development of AMR. Additionally, in certain regions, the availability of antibiotics without prescriptions leads to misuse and self-medication.

Several STIs, including chlamydia, gonorrhoea, syphilis, and trichomoniasis, frequently present without symptoms. Their asymptomatic nature results in delays in treatment, enabling infected individuals to unknowingly spread the infections. Consequently, this necessitates more extensive and prolonged use of antibiotics once a diagnosis is made. Moreover, asymptomatic individuals may fail to adhere to proper dosing regimens, further exacerbating the risk of developing antibiotic resistance.

Disproportionate impact of AMR on sexual health in low- and middle-income countries

Key statistics: *Most gonorrhoea cases in 2020 were in the Sub-Saharan Africa and the Western Pacific Regions.*¹⁷

In 2020, there were an estimated 82.4 million new cases of gonorrhoea worldwide, with most cases occurring in Sub-Saharan Africa and the Western Pacific, highlighting the disproportionate burden of

gonorrhoea and associated AMR challenges in these regions. In LMICs, limited access to effective antibiotics, inadequate healthcare infrastructure, and the prevalence of substandard and falsified medicines exacerbate these challenges. Populations in these regions are at greater risk of untreated or poorly treated infections, leading to complications such as infertility, increased HIV transmission, and other reproductive health issues.

Impact of AMR on STI treatment and control

Key statistics: *In 2020, there were 82 million new gonorrhoea cases worldwide, primarily affecting young people aged 15-49. As of 2023, out of 87 countries with enhanced surveillance, nine reported elevated gonorrhoeal resistance (5% to 40%) to ceftriaxone, the last-resort treatment option.¹⁸ Although most resistance trends have remained stable over the past 4 years resistant gonorrhoea infections increased by at least 15% compared to rates in 2017.⁵*

STIs, particularly gonorrhoea and syphilis, significantly drive AMR. Drug resistance threatens STI management, with gonorrhoea as a prime example. Once easily treatable, gonorrhoea is now increasingly difficult to manage due to a decreasing number of effective drugs.¹⁷ Elevated resistance to the last-resort antibiotic for gonorrhoea has been reported in nine countries, complicating treatment efforts.¹⁸ If unchecked, this incline could render gonorrhoea untreatable, severely impacting sexual and reproductive health.

Gonorrhoea infections increase the risk of acquiring and transmitting HIV by three to five times, amplifying STI risks.¹⁹ Antibiotic-resistant STIs also raise the likelihood of long-term complications like pelvic inflammatory disease and infertility and can lead to adverse pregnancy and newborn outcomes. Untreated gonorrhoea in pregnant women can cause severe eye infections and blindness in newborns, highlighting its intergenerational impact.²⁰ Consequently, the social stigma associated with infections like gonorrhoea can worsen due to increased public fear and misunderstanding, leading to further delays in diagnosis and care. Escalating antibiotic resistance, especially in cases like gonorrhoea, threatens to unravel decades of progress in STI control and prevention.

Implications of AMR in STIs for maternal and newborn health

Key statistics: *In 2022 alone, 1.1 million pregnant women suffered from syphilis, a bacterial infection worsened by AMR, resulting in over 390,000 adverse birth outcomes, including stillbirths.¹⁶*

The growing resistance to antibiotics in STIs, as seen in the rise of drug-resistant gonorrhoea and syphilis, has dire implications for maternal and newborn health. Infants born to mothers with untreated or drug-resistant STIs are at high risk of congenital infections, leading to long-term health issues or newborn death. While these findings underscore the direct impact of drug-resistant STIs on maternal and newborn health, the consequences of AMR extend far beyond. The ability to effectively treat infections during and after pregnancy and childbirth is crucial for the well-being of both mother and newborn. As resistance to antibiotics rises, so does the risk of severe complications and mortality for mothers and newborns, particularly in vulnerable populations with limited access to healthcare.

3. Maternal Health and AMR

Maternal and newborn health at risk from AMR

Key statistics: In 2020, an estimated 287,000 women died from preventable pregnancy and childbirth complications, with nearly 11% attributed to sepsis.^{21,22} Patients with drug-resistant infections stay in hospital 6.4 to 12.7 days longer than those with non-resistant infections.²³ The amount of antibiotics prescribed to women is about 25% higher than that for men and women are about 27% more likely than men to receive antibiotic prescriptions. The amount of antibiotics prescribed to women was 38% higher than that prescribed for men for women aged 16-54.²⁴

Antibiotic use, a cornerstone of modern health care, is essential for preventing and treating infections throughout pregnancy, childbirth, and postpartum. Pregnancy-related infections are the third leading cause of maternal death. Out of the nearly 800 deaths daily from preventable causes related to pregnancy and childbirth, around 88 are linked to infections.²¹ If bacteria causing these infections become resistant to previously used drugs, treatment options dwindle, leading to a surge in preventable maternal and newborn deaths linked to infections. This would also have devastating ripple effects on newborns, increasing the risk of neonatal sepsis—a life-threatening bloodstream infection—and further increase newborn mortality rates. Routine infections, once easily managed, evolve into complex cases that require more lengthy hospital stays and intensive interventions. This strain jeopardizes the well-being of patients, particularly women and newborns, who are vulnerable to complications from untreated or poorly managed infections. Inadequate treatment of infections among patients in intensive care impacts health outcomes and mortality.²⁵ This creates a vicious cycle of unchecked transmission and escalating health consequences.

Increasing risks in neonatal mortality and infections through AMR

Key statistics: Neonatal infections are primarily bacterial in origin, and include pneumonia, sepsis, and meningitis. Neonatal infections result in over 550 000 neonatal deaths every year.²⁶ In 2019, close to 3 million newborns experienced severe infections,²⁷ with up to 214,000 newborns dying of sepsis that has become resistant to antibiotics.²⁸ Almost half (20 million) of all estimated sepsis cases worldwide occurred in children under 5 years of age.²⁹

Neonatal infections remain the leading cause of newborn deaths. Nearly half (47%) of all child deaths under five, happen in the first 20 days of life,³⁰ emphasizing the neonatal period for survival. Babies are especially vulnerable to infections because of their underdeveloped immune systems.³¹ Given this vulnerability, the growing threat of AMR in neonatal infections poses a significant risk, as it could further increase newborn mortality rates by limiting treatment options and leaving vulnerable infants unprotected.

The Impact of AMR on infection-related stillbirths

Key statistics: In 2021, maternal infections, including STIs, contributed 1.9 million stillbirths, over half of global stillbirths. This is two infection-related stillbirths a minute.²¹

A baby who dies at or after 28 weeks of pregnancy and is born with no sign of life is classified as a stillbirth. Undiagnosed and untreated infections, such as STIs, significantly contribute to stillbirths. Effective management of infections in mothers are crucial for preventing stillbirths, while treatment is threatened by rising AMR.

AMR's Disproportionate impact on maternal and newborn health in low- and middle-income countries

Key statistics: *In 2020, 95% of preventable maternal deaths were in LMICs.²¹ Globally, 1 in 5 deaths caused by antibiotic resistance occur in children under the age of five. This is particularly evident in sub-Saharan Africa, where more than half of the deaths caused by antibiotic-resistant infections occurred in this age group.¹*

AMR reinforces existing inequalities, jeopardizes the health and well-being of vulnerable populations. The disproportionate impact of AMR is particularly severe for women and newborns in low-resource settings, exacerbating the already significant risks to maternal and newborn health and heightened mortality and morbidity. Pregnant women and newborns face devastating consequences from drug-resistant infections, including maternal and newborn sepsis, preterm birth, and increased newborn mortality. Alarmingly, approximately 40% of neonatal sepsis cases in hospitals are resistant to standard treatments,¹ with neonatal sepsis rates in LMICs being 3-20 times higher than in high-income countries.³²

4. Conclusion

While antibiotics have significantly improved global health, their benefit and effectiveness is threatened by rising levels of AMR and lack of access to essential antibiotics in many LMICs. However, AMR is not confined to hospital wards; it has far-reaching consequences for women, children, and entire communities. The intricate link between AMR and sexual, maternal and newborn health requires a comprehensive, coordinated, and multi-sectoral response. Investing in integrated, evidence-based solutions that address the root causes of AMR, while upholding principles of equity and human rights, is critical. Decisive policy action now can extend the effectiveness of antimicrobial drugs, ensuring their availability for future generations and protecting the hard-won global health gains. Addressing these gaps through inclusive and intersectional strategies will be crucial in combating AMR and safeguarding the health and well-being of vulnerable populations worldwide.

Policy Recommendations

Collaboration and Partnership

- **Global collaboration:** The global community must foster collaboration by sharing best practices and lessons learned across countries and regions in addressing AMR in maternal and sexual health settings.

National and Regional Strategies

- **Comprehensive AMR action plans:** Ensure explicit reference to linkages between AMR in maternal health and STI prevention and treatment in national AMR action plans.
- **Integrating AMR mitigation into sexual and reproductive health (SRH) programs and strategies:** Implement interventions and capacity-strengthening initiatives within SRH/MH programs to promote appropriate antimicrobial use, enhance diagnostic capabilities, and foster prevention strategies, recognizing the reciprocal relationship between AMR mitigation and improved SRH/MNH outcomes.

Health Systems Strengthening

- **Infrastructure:** Invest in healthcare infrastructure to strengthen laboratories and ensure access to quality-assured antibiotics and evidence-based treatment guidelines adapted to local epidemiology and resistance rates, as part of essential reproductive and maternal- and newborn health services.
- **Comprehensive sexual and reproductive health and rights services:** Ensure universal access to comprehensive SRHR services to prevent STIs including HIV, as well as family planning and maternal health care with clear inclusion of antimicrobial stewardship policies. These services should be available in both community and facility-based settings, including in humanitarian contexts.
- **Strengthen STI case management:** This includes comprehensive diagnosis, effective treatment and follow-up, partner notification, risk assessment, behavior change counseling, and the provision of condoms, lubricants, and HIV testing.
- **Prioritizing infection prevention and control in SRH settings:** Prioritize infection prevention and control (IPC) measures within SRH services, ensuring adequate WASH (water, sanitation, and hygiene) facilities and practices to minimize the risk of healthcare-associated bacterial infections and need for antibiotic use.

Data and Accountability

- **Surveillance:** Maternal and newborn health data needs to be collected and monitored and fully integrated into existing AMR surveillance efforts, enabling evidence-based decision-making for targeted interventions that address both AMR and MNH challenges.
- **Robust accountability:** Establish and strengthen accountability mechanisms to track progress, evaluate interventions and identify areas for improvement in health services.

Health Workforce

- **Antimicrobial stewardship:** Promote responsible antibiotic use by developing and implementing guidelines for appropriate antibiotic prescribing in maternal and sexual health settings. Tighten access to critical antibiotics, ensuring prescription-only supply and stopping over-the-counter sales.
- **Equip health workforces:** Recognize the important role played by midwives, facility-based health providers, and community health workers, in supporting health systems' efforts for antimicrobial stewardship to prevent and manage AMR. This includes ensuring they have access to adequate training, resources, and support to effectively prevent, identify, and appropriately treat resistant and susceptible AMR infections.

Education and Awareness

- **Health literacy and health promotion:** Implement targeted health literacy and promotion campaigns to educate diverse populations about AMR, the importance of responsible antibiotic use, and the benefits of seeking timely care for STIs and other reproductive health concerns, to mitigate infection risks across all groups, including newborns, pregnant women, adolescents, youth, men, women, and seniors.
- **Comprehensive sexuality education (CSE):** Provide age-appropriate CSE for young people, equipping them with the knowledge and skills to make informed decisions about their infections and treatment, their sexual health and how to protect themselves from STIs and decide on their pregnancies.

About UNFPA: Advancing Sexual and Reproductive Health and Combating AMR

UNFPA is the United Nations sexual and reproductive health agency. Our mission is to deliver a world where every pregnancy is wanted, every childbirth is safe and every young person's potential is fulfilled. We work with partners in over 150 countries to provide access to sexual and reproductive health services. Our goal is to end preventable maternal deaths, end an unmet need for family planning and end gender-based violence and harmful practices. UNFPA plays an important role in counteracting AMR by focusing on comprehensive sexual and reproductive health and rights. These efforts improve health outcomes for women, girls, and communities, and reduce the strain on healthcare systems and the need for antibiotics. By strengthening health systems, training healthcare workers, especially midwives, and ensuring access to quality SRH services, UNFPA is making significant strides in reducing the need for antibiotics during pregnancy and childbirth. As one of the largest suppliers of condoms to developing countries and a key partner in promoting their access and utilization, UNFPA helps to prevent unintended pregnancies and reduces STI and HIV transmission. UNFPA also ensures that comprehensive sexuality education programs are implemented in and out of schools to empower adolescents and young people with the knowledge and skills to make informed decisions about their sexual health, reducing the risk of STIs and the need for antibiotics.

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