GEAR UP

GENDER AND EQUITY IN ANTIMICROBIAL RESISTANCE: SIERRA LEONE

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Acknowledgements

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Executive summary

Antimicrobial resistance (AMR) poses a critical public health threat globally, but its burden is not equally distributed. Social determinants such as gender, income, geography and access to healthcare shape how individuals are exposed to and affected by resistant infections. Gender and equity concerns remain poorly integrated into AMR policy and surveillance. This report explores the equity dimensions of AMR in Sierra Leone and the extent to which Sierra Leone's AMR policy integrates gender and equity considerations.

There is a notable lack of published evidence on the context-specific equity dimensions of AMR in Sierra Leone. Further research into the social drivers of AMR across contexts within Sierra Leone is needed. AMR policy in Sierra Leone includes community-level strategies, suggests strengthening infection prevention at community and health facility levels and mentions rural communities, those with poor access to healthcare, healthcare workers and those exposed to environmental contamination. However, it does not explicitly outline targeted interventions for vulnerable and marginalised groups or include equity in AMR governance and monitoring.

Integrating gender and equity considerations into existing AMR strategies is essential for achieving equitable health outcomes. Without such integration, AMR policies risk perpetuating existing inequities by neglecting those most affected by drug-resistant infections. While Sierra Leone has made notable progress in strengthening AMR governance across One Health sectors, this report identifies significant opportunities to understand and address the equity dimensions of AMR in Sierra Leone in order to design more effective policy and interventions. This includes striving to fill an evidence gap, addressing biases in surveillance data and mainstreaming equity through AMR policy. We identify detailed key recommendations for mainstreaming equity considerations into AMR policy in Sierra Leone.

List of key terms

Antimicrobial resistance	Antimicrobial Resistance (AMR) occurs when bacteria, viruses, fungi and parasites develop resistance to antimicrobial medicines, which become ineffective towards specific infections as a result and result in increased risk of disease spread, severe illness, disability and death[1].
Antimicrobial use	Antimicrobial use refers to the ways that people use antimicrobials in their daily lives, the lives of their children and their animals and the social, cultural and political context in which prescribing and use occurs[2].
Gender	The socially constructed roles, behaviours, activities, attributes and opportunities that any society assigns to men and women, boys and girls, transgender people and people with non-binary identities, and which shapes their relationships and interactions within hierarchies of power[3]. Gender varies from society to society and can change over time. Sex and gender are intertwined, with gender often being a socialised aspect of sex[4]. We recognise that gender is non-binary, but findings of studies included within this report may use binary language. Gender as a power relation shapes risk of disease, access and use of health services and disease experience[5]. Gender is just one axis of social advantage and disadvantage and intersects with other social and power structures to affect health inequities[7].
Gender analysis	Frameworks for gender analysis in health vary, but broadly, gender analysis seeks to identify how gender norms, beliefs, roles, time allocation, division of labour, access to resources, and rules and decision making constitute gender power relations that lead to different experiences within health systems and can be further retrenched or reversed by health systems and interventions[5,6].
Health inequities	The "unfair and avoidable or remediable systematic differences in health among population groups defined socially, economically, demographically or geographically"[7].
Intersectionality	An analytical lens to understand the ways in which different axes of power, inequity and marginalisation intersect and interact in dynamic ways to create unique and specific experiences and processes of marginalisation, including gender, race, ethnicity, age, disability, Indigeneity, refugee status and class. The concept of intersectionality emerged from black feminist theory and was coined by Kimberlé Crenshaw[8].
Sex	Biological aspects of bodies that categorises males, females and intersex people or those who have differences of sex development and may differ from a person's gender identity[5,6].
Social determinants of health	The conditions of daily life such as income, social protection, education, job security, working conditions, food (in)security, housing, the environment, early childhood development, social inclusion, discrimination, conflict and access to affordable health services, among other factors such as race, gender, ethnicity, age, sexuality, class and disability that lead to the unequal distribution of health-damaging or facilitating experiences, and thus health inequities and outcomes, within and across countries[7]. They are fundamentally a result of the "unequal distribution of power, income, goods, and services, globally and nationally" (the structural determinants of health), which "are responsible for a major part of health inequities between and within countries"[9].

1 WHO. Antimicrobial resistance. 2023 [cited 2025 Mar 19]. Antimicrobial resistance. Available from: https://www.who.int/news-room/fact-sheets/detail/antimicrobial-resistance

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7 World Health Organization. Incorporating intersectional gender analysis into research on infectious diseases of poverty: a toolkit for health researchers. In: Incorporating intersectional gender analysis into research on infectious diseases of poverty: a toolkit for health researchers. 2020.

8 Crenshaw KW. Mapping the margins: Intersectionality, identity politics, and violence against women of color. In: The public nature of private violence. Routledge; 2013. p. 93–118.

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List of acronyms

AH	Animal health
AMR	Antimicrobial resistance
CSO	Civil society organisation
CHWs	Community Health Workers
DLVS	Directorate of Livestock and Veterinary Services
EH	Environmental health
EPA-SL	Environmental Protection Agency-Sierra Leone
FAO	Food and Agriculture Organization
HH	Human health
KII	Key informant interviews
LMICs	Low- and middle-income countries
MAF	Ministry of Agriculture and Food Security
MGCA	Ministry of Gender and Children's Affairs
MDAs	Ministries, Departments, Agencies
MECC	Ministry of Environment and Climate Change
MFMR	Ministry of Fisheries and Marine Resources
MoHS	Ministry of Health and Sanitation
NAP	National Action Plan
NPHA	National Public Health Agency
TWG	Technical Working Group
UNDP	United Nations Development Programme
WASH	Water, sanitation and hygiene
WHO	World Health Organization

1. Introduction

The global context of AMR and inequity

Antimicrobial resistance (AMR) occurs when bacteria, viruses, fungi and parasites evolve over time and are no longer susceptible to antimicrobials[1,2]. Although the evolution of resistant microbes is a natural process, particular patterns of antimicrobial prescription and use across One Health sectors can minimise the risk of resistance developing. However, people's ability to access required antimicrobials and to use them in recommended ways is heavily influenced by the social and structural determinants of health (the non-medical factors that shape health outcomes and drive health inequities among and between populations) [3], such as limited availability of quality essential antimicrobials, vaccines, and diagnostics [4]. These, in turn, are influenced by the broader geo-politics that drive global inequities in drug production and access and the conditions of living and working that lead to the spread of infectious disease in the first place.

Low- and middle-income countries (LMICs) experience up to 90 percent of total global deaths from AMR, high rates of infectious diseases, challenges in access to healthcare and global inequities relating to the supply of antimicrobial access[5-7]. Research estimates that 250,000 deaths were attributable to bacterial AMR in Africa in 2019[8]. South Asia, Latin America, and the Caribbean are forecasted to have the highest AMR mortality rates by 2050[9]. AMR burden is also unequally distributed within countries[10,11] but we do not have a detailed picture of this due to an absence of disaggregated AMR data [12,13].

It is well understood that inequities have a profound impact on health systems and disease burden[14,15]. Despite this, much AMR research and policy frames AMR as a problem of knowledge or behaviour. Although there is a need to expand people's access to information and training around safe antimicrobial use, AMR interventions must also recognise the necessity of addressing the root causes of AMR and infectious disease spread, by expanding access to water, sanitation and hygiene (WASH) and vaccines and striving for universal health coverage[4,16]. This represents a critical missed opportunity to tailor AMR interventions to address the root causes of AMR spread and improve programmatic effectiveness, equity and sustainability[17].

The international community has recently underscored the importance of equity in AMR. In September 2024, WHO released guidance on gender and AMR, noting that the majority of National Action Plans (NAPs) on AMR do not mention sex or gender[14]. Their guidance provides 20 recommendations to make AMR efforts more gender-responsive, such as strengthening data collection on AMR and gender, and establishing NAP indicators to monitor equity outcomes.

The regional/national context of AMR and inequity

There is a high prevalence of resistant and multidrug-resistant infection in West Africa[15], where gender disparities influence AMR in multiple ways. These include infection resulting from lack of access to WASH facilities, cultural norms and power relations that limit opportunities for health and health seeking and gendered barriers to education[16]. When living conditions are poor or overcrowded, such as in informal settlements and refugee camps, infections remain untreated or improperly treated[16]. AMR in Sierra Leone is considered a major health threat, particularly impacting those under 5 years old[17].

But gaps remain in West African AMR policy. Adebisi et al. found that while most NAPs make reference to one or more of rural communities, healthcare workers, and those with poor healthcare access, few explicitly identify women, children, displaced persons or the urban poor [18].

As Adebisi et al. state:

> *"The rising prevalence of resistant pathogens in the [African] region reflects microbial adaptation as well as entrenched structural inequalities related to healthcare access, sanitation, governance and pharmaceutical regulation. Addressing AMR in this context therefore requires technical interventions as well as equity-focused strategies that consider the social and systemic drivers of resistance... An equity-informed approach is essential to achieving the overarching goals of the GAP on AMR and the SDGs"* [18]

2. Aims and objectives

Aims: To identify key themes relating to gender, equity and AMR across One Health sectors in Sierra Leone, to identify gaps and opportunities for more inclusive action in AMR programming and to provide context-specific recommendations to mainstream gender and equity in the country.

The findings of this landscape analysis should inform future areas of work and priority activities as part of the mainstreaming response.

Aligned with the GEAR up terms of reference, key questions guiding this landscape analysis:

a) How does antibiotic resistance differentially affect men, women, children and people of diverse sex in terms of diseases and treatments over the life course?

b) Do any social groups face greater/different risks to AMR exposure, or more challenges in accessing and benefiting from the information, services and solutions to tackle AMR?

c) What are the gaps and opportunities for mainstreaming within country systems, policies and contexts and to support vulnerable groups?

3. Methods

This review followed an iterative two-step process, including a scoping review of global and country-specific literature discussing equity dimensions of AMR and AMU, analysis of national AMR relevant policy documents, and a series of key informant interviews (KIIs) with key national AMR stakeholders. The methods are presented in detail below.

Scoping review

This scoping review built on a larger, global systematic review of AMR and inequity carried out by the GEAR up consortium[19], with country-specific research identified from the final search results and supplemented with additional country-specific searches.

Policy document review

We used a structured framework (Annex 1) to assess the extent to which existing national AMR policy documents mainstream equity and gender in AMR governance, surveillance, stakeholder engagement and implementation. This specific approach was developed by GEAR up colleagues at LVCT Health, Kenya and is grounded in the global guidance for gender mainstreaming (Annex 2) on addressing inequities in NAPs, which provides a foundational framework for integrating equity considerations across AMR-related policy and surveillance tools. The framework is designed to: 1) provide a systematic approach to reviewing AMR policies and tools through a gender and equity lens; 2) identify areas of strength, partial integration, or absence of equity-responsive elements; 3) support comparative analysis across documents, sectors, and countries; and 4) inform practical recommendations for improving inclusivity in AMR governance and surveillance systems.

The framework comprises 12 core domains (annex 3). For each domain, the framework outlined specific indicators to assess both explicit and implicit integration of gender and equity principles. Qualitative content analysis was applied to systematically determine the explicit and implicit integration of equity dimensions within policy documents. For example, explicit references included direct mentions of gender equality, vulnerable populations, or equity-related objectives; implicit references included mentions of Community Health Workers (CHWs), informal caregivers, rural populations, or underserved regions. This comprehensive approach also allowed for comparative analysis between One Health sectors (human, animal, environmental health), with the aim of highlighting strengths, gaps, and actionable opportunities for mainstreaming and equity-oriented AMR programming.

Six documents were reviewed. These included NAPs and publicly available documents. Where possible, we also reviewed facility-level surveillance tools such as laboratory registers and data collection forms used at points of care, guided by a distinct set of indicators drawn from literature and global guidance on the influence of equity factors on antimicrobial use and AMR exposure.

4. Findings

Findings from the literature review

Global level findings

Biological susceptibility to infection is increased by malnutrition, which disproportionately affects low-income groups, women and girls, due to a combination of poverty, inequitable food systems and gender norms[20,22]. Additionally, gender power relations that drive sexual violence and limit women's reproductive rights lead to HIV among women[23]. Inequitable vaccine access leads to inequitable spread of resistant infections and demand for antibiotics[24,25]. Unequal exposures to resistant infection and antibiotics primarily occur through the conditions of living and livelihoods associated with poverty and marginalisation. These include overcrowding, lack of ventilation, limited access to clean water and quality sanitation[26,30].

Livelihoods also produce inequitable exposures to resistant infections and to antibiotics and are heavily influenced by socioeconomic and gender inequities. For example, some people are exposed to the antibiotics used in animals through their livelihoods in farming and food production[31]. Specific roles in animal care are often gendered[32,33]. Occupations in sex work also place people at high exposure to drug-resistant sexually transmitted infections such as gonorrhoea, syphilis and HIV[34,36].

For the reasons above, AMR disproportionately impacts displaced communities, rural residents, the elderly, children and those living with infections such as HIV[37].

Barriers to accessing health services are shaped by occupation, income, agency, gender and geography. In particular, low-income communities face barriers to accessing formal health and fluctuating ability to pay[38,41]. In many locations, stock-outs may prevent access to recommended antibiotics[42,43]. Gendered household dynamics can also act as barriers to health-seeking for women, including mothers[38,44]. Furthermore, experiences of discrimination can act as barriers to seeking care[38]. These same factors can create barriers to continuation of drug treatment, particularly where treatment schedules are long[41,45,46].

We identified less research on how inequities and socioeconomic factors influence AMR and AMU in animal populations, highlighting a significant research gap. Similar barriers to the recommended use of antimicrobials are seen as in human health[47,49]. Prescribers are also influenced by economic pressures and health system resourcing[28,47,50].

People's access to information and education about AMR and antibiotic use is influenced by wider trends in access to formal education, occupational training and socioeconomic status[51'52]. Those who can visit health facilities more tend to have more access to AMR information. Those that face barriers to accessing formal health services therefore also face barriers to accessing information on AMR. Poorly labelled medicines in areas of Africa and Asia also limit people's ability to make decisions about recommended antibiotic use[53]. Knowledge sharing is also highly gendered, with women often expected to be responsible for children's health, but less likely to access formal health services, beyond CHWs than men in some contexts[42,54].

Global evidence shows that the health expenditure associated with AMR can lead to catastrophic costs for those living in poverty or with low incomes[55,56]. Some also find that disclosing diagnoses can lead to reduced social support, loss of relationships and even being expelled from home[57,58] and this stigma can impact women more[59].

Country-level findings

We found a significant lack of research on AMR in Sierra Leone that explicitly addresses equity dimensions. A summary of this literature is presented below.

Disease burden

Across human health, women and children appear to bear a disproportionate burden of AMR-related impacts in low-resource settings. A recent analysis in Sierra Leone noted that AMR "disproportionately affects women and children," undermining progress in maternal health and child survival[18]. Women are especially vulnerable to specific drug-resistant infections worldwide, attributable to both biological and social determinants. For instance, many communities don't have enough access to clean water and sanitation, which puts women at a higher risk of drug-resistant urinary tract infections because of the need for water to ensure hygiene during menstruation and to ensure urogenital health.[21] In Sierra Leone, where water and sanitation infrastructure is limited, these gendered risks are pronounced. Women also typically shoulder caregiving responsibilities; they are the people tending to sick family members and making health decisions for children, which increases their contact with healthcare settings and antibiotics. In fact, women make up roughly 70% of the healthcare workforce worldwide[22].

AMR disproportionately affects women and children in Sierra Leone, contributing to maternal and child health setbacks[78]. Moreover, the predominantly urban hospital data miss rural realities; for example, women in remote areas may lack access to diagnostics, or men may delay seeking care, leading to different outcomes, but these differences are not recorded in current datasets[79].

Prescription and use of antibiotics

A study on antibiotic use and consumption in Freetown found that female patients were less likely to receive antibiotics for inappropriate indications compared with male patients[60]. A different study found that the proportion of boy who received antibiotics was higher than that of girls[61]. A study with healthcare workers in Sierra Leone also found that non-recommended prescribing practices were common[62]. Research has identified that adolescents and young people in Sierra Leone have a limited understanding of antibiotic resistance[63], but it is not clear how this compares to other age groups within the country.

Findings from the policy analysis

Adebisi et al. found that the Sierra Leone National Strategic Plan for Combating Antimicrobial Resistance (2018-2022) included community-level strategies but lacked targeted interventions for vulnerable and marginalised groups[18]. It mentions rural communities, those with poor access to healthcare, healthcare workers and those exposed to environmental contamination, and suggests strengthening infection prevention at community and health facility levels, awareness campaigns and improved waste management systems. But it does not include equity in AMR governance and monitoring explicitly.

Our analysis revealed that Sierra Leone's National Strategic Plan for Combating Antimicrobial Resistance (2018-2022) is mostly focused on clinical and laboratory data. It doesn't advocate for collecting the demographic or contextual data (like sex, gender, job or socioeconomic status) that are needed for equity monitoring.

The monitoring and evaluation plan, which is part of the NAP annexes, has output and outcome indicators for infection control, antimicrobial use and lab functionality, but it does not have equity-sensitive or gender-disaggregated indicators. Gender and equity dimensions are absent across all components. There is no discussion of gender roles, social vulnerability, or population disparities in access to antimicrobials, diagnostics, or stewardship interventions.

At the institutional level, stakeholder inclusion is strong, with the Ministry of Health and Sanitation, Agriculture, and Environment all involved. However, community, civil society, and marginalized groups are not represented in governance or consultative structures.

Efforts to build capacity are strong for strengthening technical and laboratory skills, but they don't include training on collection or analysis of equity data. Communication and awareness campaigns target health professionals and the general public, but they are not tailored to specific vulnerable groups like people who live in rural areas or work in the informal sector. The lack of gender, equity, and social inclusion considerations in the AMR strategy creates a gap in implementation that could make it harder for the plan to deal with differences in AMR exposure and outcomes at the population level.

Table 1: AMR Policy Review Matrix

Policy Document Title	1. Vision and Principles	2. Legal Alignment	3. Gender and Equity Objectives	4. Stakeholder Inclusion	5. Intersectionality	6. Implementation	7. Surveillance and Data	8. Monitoring and Evaluation	9. Research	10. Capacity	11. Communication	12. Financing and Sustainability
National Strategic Plan for Combating Antimicrobial Resistance (2018-2022)	✓	✓	✗	✓	(✗)	✓	✓	✓	✓	✓	✓	✓
AMR Surveillance and Laboratory Strengthening Framework (within NAP Strategic Objective 3)	✗	✗	✗	✓	✗	(✓)	✓	(✓)	(✓)	✓	✗	✗
AMR Monitoring and Evaluation Plan (Annex to NAP)	✗	✗	✗	✗	✗	(✓)	(✓)	✓	(✓)	(✓)	✗	✗
Infection Prevention & Control (IPC) and Waste Management Strategy (integrated in NAP Objective 4)	(✓)	(✓)	✗	(✓)	✗	✓	(✓)	(✓)	✗	✓	(✓)	✗
Antimicrobial Stewardship and Rational Use Guidelines (within NAP Objective 5)	✗	✓	✗	(✓)	✗	✓	(✓)	✗	✗	✓	(✓)	(✓)
National Health Laboratory Strategic Plan (linked to NAP)	✗	✗	✗	(✓)	✗	✓	✓	(✓)	(✓)	✓	✗	✗

Legend

✓: This indicates that the document provides clear and explicit coverage of the domain. The theme is directly named and described, and the document includes concrete elements such as defined objectives, dedicated sections, operational actions, indicators, guidance or implementation requirements that relate specifically to that domain. This symbol shows that the domain is intentionally integrated into the document's framing and is expected to shape planning, delivery and monitoring

✗: This indicates that the document does not explicitly reference the domain in question. It does not mean that the domain is absent in practice or that it could not be inferred; it simply means there is no direct statement, section or guidance addressing that theme.

(✓): This indicates that the document contains partial, implicit or indirect reference to the domain. This may include language that touches on the theme without naming it specifically, broad principles that relate to equity or capacity, or operational guidance that indirectly connect to the domain. This symbol should be interpreted cautiously because these references are interpretive rather than explicit.

N/A: This means the domain is not applicable to the document's purpose or scope. For example, some technical surveillance or laboratory guidelines are not expected to address gender and equity objectives, financing or communication strategies and therefore cannot be assessed meaningfully against these domains.

5. Summary of findings

We can look to the findings of this report to understand the processes that lead to inequitable burden and impacts of AMR and make inferences about the most affected groups where context-specific evidence is absent. Findings highlight that inequities are highly context-specific, emphasising the need for context-specific research and evidence summaries such as this one.

Which social groups face different risks to AMR exposure, or more challenges in accessing and benefiting from the information, services and solutions to tackle AMR?

This report has highlighted that there are diverse experiences and impacts of AMR across different groups and contexts. Specific groups often have increased risk of exposure to AMR and also face specific barriers to accessing and using antimicrobials in recommended ways. These groups are context specific but include low-income communities, remote rural communities, urban informal settlements, displaced people and workers on the front line of specific industries in the human and animal health sectors.

How does antibiotic resistance differentially affect men, women, children and people of diverse sex in terms of diseases and treatments over the life course in Sierra Leone?

Malnutrition and inequitable vaccine access increase susceptibility to infection. Specific groups may be physiologically more susceptible to UTIs including women of reproductive age and elderly men in healthcare settings. Exposure to resistant infection is mediated by domestic and occupational exposures, and depends on gender norms and roles, socioeconomic status and quality of living conditions. The root cause of many of these is poverty.

How do power dynamics and gendered vulnerabilities influence antibiotic use?

Different exposures to antibiotics come about due to different degrees of agency over health-seeking opportunities and pathways, which are frequently mediated by gender roles in households and communities and levels of decision-making power around human health seeking and access to animal health services. There is evidence of gender biases in clinical prescribing in many contexts. Training and resources in animal health occupations are often less available to women in this sector, limiting their ability to access and use antibiotics in recommended ways and increasing the precarity of their livelihoods. Scoping review findings point to the importance of understanding the mostly unexplored dynamics of equity and exposure to antimicrobials for those in occupations in the animal health and farming sectors.

What are the gender and equity blind-spots and opportunities for mainstreaming in AMR policy, country systems and contexts?

Facility-collected surveillance data needs to be complemented with research into the structural drivers of AMR to support equitable evidence production and policy making in Sierra Leone[64]. For AMR interventions to be effective, there is a need for a thorough understanding of people's behaviours and practices about AMR knowledge and antimicrobial in the context[65]. There is also a need for interventions across the One Health spectrum that move beyond narrow behavioural approaches and address access to WASH, access to healthcare and timely diagnosis, and improved living conditions[64]. For example, in Zambia, multidisciplinary-led implementation of antimicrobial stewardship programmes were found to be particularly effective and could be implemented in Sierra Leone[66].

In their review, Kapatsa *et al.,* emphasise the necessity for interventions that can equitably enhance public education on antibiotic use, improve accessibility of diagnosis and treatment, and address socio-economic disparities that pose as barriers to improving these, and argue that multidisciplinary collaboration and contextual research will be key to achieving sustainable impacts[65]. This is critical for Sierra Leone, as currently there is very little evidence to draw on for contextually informed action. There is an urgent need for more research conducted in partnership with local communities to unpack the context-specific barriers to appropriate antibiotic use and diagnoses. We provide a detailed list of country-specific opportunities to strengthen and mainstream equity in AMR policy and surveillance in the following section.

Strengths and limitations

We adopted a multi-method approach, triangulating our landscape analysis across a literature and document review. These complementary data sources enabled triangulation across formal policy, operational practice and perspectives from research, including drawing on published research with a community or equity focus, and with particular attention to surveillance. We devised a structured process to review national documents as based on WHO's gender NAP and validated this tool across GEAR up focus countries. While this landscape analysis was designed to provide a comprehensive, multi-method assessment of gender and equity integration in AMR policy and surveillance systems in Sierra Leone, several limitations should be acknowledged to contextualise the scope and interpretation of findings.

Budget constraints meant we were unable to conduct interviews in the country context. Therefore we relied on secondary literature review. Unfortunately, the evidence that speaks to gender and equity in AMR within Sierra Leone is limited, which limits the scope of our analysis. However, we aimed to mitigate this by drawing on global-level findings. Further, the policy document review drew more heavily on human health AMR policies, surveillance systems, and implementation tools, reflecting the research team's expertise and networks, although efforts were made to incorporate One Health and cross-sectoral considerations and research as far as possible. As such, the findings do not represent a full analysis across One Health Spectrum. We did not include an in-depth analysis of AMR or AMU/C datasets to triangulate findings with surveillance tool design and implementation, and therefore this study did not assess how routinely sex-disaggregated or equity-sensitive data are captured, analysed, or used in decision-making across surveillance systems, which would be a useful next step. We know this is currently limited at a global level, but that GLASS have recently started to request data disaggregated by sex and age, and therefore this is a positive opportunity moving forwards.

6. Key recommendations to mainstream gender and equity in AMR

The following recommendations are grounded in the findings from the document review, and available literature. They respond directly to the practical gaps identified. They are intended to inform revisions of NAPs, (establishing the institutional and policy foundations necessary for embedding equity into national AMR agendas and governance structures); surveillance tools (enabling the routine collection, disaggregation, and use of equity-sensitive data and addressing the structural limitations preventing AMR systems from detecting disparities in antimicrobial access, resistance patterns, and health outcomes); operational guidance (including training, partnerships and use of new evidence and establishing feedback loops); and research generation.

They build on the WHO's 'Addressing gender inequalities in NAPs on antimicrobial resistance' and are structured in the same way, by short-, medium- and long-term actions to support the integration of gender and equity considerations across policy, surveillance, governance, and implementation systems:

- *Short-term* – recommendations that are relatively feasible and can be implemented in the next one to two years;
- *Medium-term* – recommendations that require longer timeframes to be implemented such as in the next three to four years due to, for example, capacity constraints or scale of change;
- *Long-term* – recommendations that are more aspirational and may require five or more years to achieve.

Short-term

Policy:

- Designate gender and equity focal persons or 'equity champions' within all national and county-level AMR structures. The champions will ensure that gender and equity considerations are systematically integrated into national and county-level AMR planning, surveillance, stewardship and reporting processes.

Role: All One Health AMR coordination structures (HH, AH, and EH), including the Ministry of Health and Sanitation (MoHS) - Directorate of Health Security & Emergencies/AMR Secretariat, the Ministry of Agriculture and Food Security (MAF) - Directorate of Livestock and Veterinary Services (DLVS), the Ministry of Fisheries and Marine Resources (MFMR) and the Ministry of Environment and Climate Change (MECC)/Environmental Protection Agency-Sierra Leone (EPA-SL).

- Include gender experts, community representatives, and actors with lived experience in AMR Technical Working Groups (TWGs) and planning bodies, ensuring that AMR policies, surveillance systems, and interventions reflect diverse perspectives and address real-world barriers faced by different population groups in human, animal, and environmental health.

Role: This should include the MoHS AMR TWG, the Ministry of Gender and Children's Affairs (MGCA), civil society organisations (CSOs) such as Women Against Poverty, Health for All Coalition, Networks of CHWs, farmer associations, and academic institutions (University of Sierra Leone, Njala University).

Surveillance:

- Conduct sex and age analysis of existing surveillance data as per GEAR up's 'Guidance on analysing bacteriology laboratory and antimicrobial use data' to ensure equity insights inform national and county decision-making. This will ensure that equity insights meaningfully inform national and county decision-making across human, animal and environmental health systems.

Role: MoHS, the Directorate of Health Security & Emergencies/AMR Secretariat, and the MAF.

Strengthen the capacity of One Health Surveillance teams and frontline personnel on gender-sensitive data practices, health-seeking behaviour differences, and implicit bias. The training should include modules on gender norms, access barriers, and cultural dynamics affecting antibiotic use in human, animal, and environmental health, drawing in resources such as GEAR up's Open University course.

Role: MoHS, MAF, academic institutions and professional councils.

Integrate gender and equity as guiding principles across AMR surveillance frameworks, aligned with GLASS and WHO equity guidance.

Role: the MoHS, the Directorate of Health Security & Emergencies/AMR Secretariat, the WHO and the MAF.

- Jointly create standardised protocols and analytical tools for interpreting AMR data through a gender and equity lens, including community-level insights. Reporting tools across human health, veterinary practice and agricultural production should be revised to capture sex-disaggregated and equity-sensitive indicators, enabling a clearer understanding of how antimicrobial access and use differ across populations and sectors.

Role: All One Health AMR coordination structures (HH, AH, and EH), including the MoHS - Directorate of Health Security & Emergencies/AMR Secretariat, the MAF - DLVS, the MFMR and the MECC/EPA-SL, academic institutions and the MGCA.

- Explicitly recognise gendered trends and inequities in antimicrobial consumption and use within AMU/C guidelines and reporting tools.

Role: the MoHS, the Directorate of Health Security & Emergencies/AMR Secretariat, the MoHS Pharmacy Board of Sierra Leone, Directorate of Drugs and Medical Supplies, the DLVS and the Traditional Medicine Directorate.

Research and operational:

- Invest in transdisciplinary research to explore gender- and equity-specific drivers of AMR and implementation research to evaluate what works in addressing disparities across the human, animal and environmental sectors to identify what interventions effectively reduce disparities in access, exposure and treatment outcomes.

Role: the MoHS Research and Ethics Directorate, academic institutions (University of Sierra Leone/Njala University), development partners, the NPHA, the MAF - DLVS, the MFMR, and the MECC/EPA-SL.

- Investigate gendered differences in veterinary service access and antibiotic usage, and address gaps through targeted community-level animal health systems stewardship and education efforts, especially among smallholder farmers, women livestock keepers and the youth.

Role: the NPHA One Health Platform, the WHO, the FAO, UNICEF and the West African Health Organization.

Medium term

Policy:

- Coordinate the revision of the NAP to embed explicit gender and equity commitments across the One Health system. Drawing on regional models such as Uganda's GEAR Up experience to guide adaptation.

Role: the MoHS, the Directorate of Health Security & Emergencies/AMR Secretariat and the Ministry of Finance.

- Ensure the inclusion of dedicated budget lines in the NAP and ensure that these allocations support the development of gender-sensitive approaches. Specific funds should be allocated to enable the development of gender-specific indicators and targeted interventions to address inequities in antimicrobial use and access.

Role: the MoHS, the Directorate of Health Security & Emergencies/AMR Secretariat and the Ministry of Finance.

- Embed gender and equity considerations across all AMR strategic objectives, with clearly defined equity-sensitive targets and implementation pathways across human, animal and environmental health systems.

Role: the MoHS - Directorate of Health Security & Emergencies/AMR Secretariat, the MoHS Planning & Policy Directorate, the NPHA Monitoring & Evaluation Unit, the DLVS and EPA-SL.

- Integrate gender- and equity-specific indicators into national AMR monitoring and reporting systems and establish accountability mechanisms. Oversee and validate this process to ensure equity commitments are routinely tracked and reported at the national and county levels. Formally include all the state and non-state gender and social development actors and community networks as co-authors and reviewers of national AMR policy revisions, with formalised roles in review cycles. CSOs should have defined roles to ensure gender and social considerations are systematically incorporated.

Role: the NPHA, Statistics Sierra Leone, the MGCA, civil society and community networks and the MGCA.

- Establish institutional mechanisms for routine integration of gender and equity evidence into national AMR policy, strategy revisions, and reporting cycles to guide One Health decision-making.

Role: the MoHS Policy, Planning and Information Directorate, the NPHA One Health Secretariat, the MGCA and academic institutions.

Surveillance:

- Ensure that surveillance systems include data from smallholder and women-led farms. These actors should prioritise these settings given evidence of higher AMR risks linked to distinct health-seeking behaviours and variable access to veterinary services.

Role: the DLVS, Agricultural Extension Officers and farmer-based organisations and cooperatives.

- Mandate standardised collection of sex-disaggregated and equity-sensitive data across AMU surveillance sites, including variables such as education, income, insurance, and co-morbidities. As per GEAR up's 'Intersectional Indicators in surveillance of antimicrobial resistance and use'.

Role: the NPHA, the MoHS Health Information Systems Programme and DLVS surveillance units.

- Develop and mandate use of gender-responsive surveillance SOPs and data collection protocols across human and animal health sectors. Endorse and mandate their use to ensure consistent implementation across human and animal health systems.

Role: NPHA, MoHS and DLVS technical teams.

- Identify population groups that are routinely excluded from surveillance, such as mobile populations, informal workers, women in unregulated food production systems and key populations. Actors should design explicit surveillance programmes for these groups, drawing on examples like GEAR up Zimbabwe's sex worker surveillance programme and related evidence.

Role: MoHS Community Health Directorate, MGCA, NGOs working with mobile populations, informal workers and women traders.

Operational:

- Strengthen links with existing social development and gender structures, such as county gender departments, school health platforms, disability networks and youth/women's groups, to inform surveillance design ensuring that it reflects social, gendered and community-specific realities across human, animal and environmental health.

Role: MGCA, Local Council gender desks, youth and women's networks.

- Strengthen partnerships with agricultural cooperatives, farmer associations and women-led farming groups to expand the reach and relevance of AMR surveillance within livestock and food production systems.

Role: the MAF, DLVS, farmer associations and cooperatives.

- Establish formal feedback and engagement mechanisms to enable community members, CHWs, environmental inspectors and other frontline workers to provide input into the design, piloting and revision of surveillance tool design.

Role: NPHA, MoHS Community Health Directorate, Local Councils.

Strengthen community-level AMR stewardship by formally integrating CHWs to equip them with gender-sensitive training, tools and supervision so they can support appropriate antimicrobial use, identify use patterns and provide community-level insights that inform local surveillance and stewardship interventions across human, animal and environmental health systems.

Role: MoHS, DLVS, EPA-SL, CHW Hub and implementing NGOs.

Long term

Policy:

- Develop specific long-term strategies on equitable AMR prevention, surveillance and antimicrobial access, addressing the needs of marginalised populations, including women, children, persons with disabilities, displaced communities, and rural populations. These strategies should provide direction on how human, animal and environmental health systems can strengthen surveillance, improve stewardship and address structural barriers that increase vulnerability to AMR.

Role: MoHS, MGCA, NPHA, MAF, MECC, Human Rights Commission of Sierra Leone.

Surveillance:

- Expand surveillance data collection tools to routinely include sex, age, education, location, disability, occupation, caregiving role, income, marital status, and refugee status as per GEAR up guidance for equity-sensitive data capture: 'Intersectional Indicators in surveillance of antimicrobial resistance and use'.

Role: Statistics Sierra Leone, the NPHA and the MoHS Health Information Systems Programme.

- Upgrade surveillance data systems to enable routine disaggregation, with dashboards and feedback loops that allow real-time equity analysis at national and sub-national levels.

Role: the NPHA, the MoHS ICT Unit, development partners.

- Promote equitable resource distribution (funding, equipment and capacity-strengthening support) to counties to ensure surveillance infrastructure and capacity-strengthening reach underserved areas.

Role: the Ministry of Finance, the MoHS & MAFS Planning Directorates, Local Councils.

Evidence generation and uptake:

Apply intersectional analysis to assess how overlapping factors such as sex, age, disability, income, and setting influence antimicrobial access and resistance.

Role: Academic and research institutions, the NPHA, the MoHS Research Directorate and WHO.

- Combine qualitative community evidence with quantitative surveillance data to identify population-specific vulnerabilities and inform One Health responsive action and policies.

Role: the MoHS Community Health Directorate, academic Institutions, the NPHA, CSOs and community-based organisations.

Conclusion

Across West Africa, a range of social groups face specific exposure to antimicrobial resistance and specific barriers to accessing and using antibiotics in recommended ways. These are driven by socioeconomic inequities based on gender, poverty, geography and other factors. They are highly context-specific but there remains a lack of evidence from Sierra Leone that explores these processes. Integrating gender and equity considerations into existing AMR strategies is essential for achieving equitable health outcomes. Without such integration, AMR policies risk perpetuating existing inequities by neglecting those most affected by drug-resistant infections.

While Sierra Leone has made notable progress in strengthening AMR governance across One Health sectors, this report has identified significant opportunities to understand and address the equity dimensions of AMR in Sierra Leone to design more effective policies and interventions. This includes striving to fill an evidence gap, addressing biases in surveillance data and mainstreaming equity through AMR policy.

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Annexes

Annex 1: Gender and Equity Assessment Framework for AMR NAPs, Strategic Plans, and Policies in AMR Programming

This annex presents the full Gender and Equity Assessment Framework that was applied during the landscape analysis to assess how well national AMR policy documents and surveillance strategies integrate gender and equity considerations. The framework is grounded in global standards, including the WHO's Addressing Inequalities in NAPs on Antimicrobial Resistance guidance.

Indicator	Guiding Question
Policy Context and Framework:	Inclusion of Gender and Equity in Vision and Mission: · Does the NAP/strategic plan/policy explicitly state gender and equity as part of its vision and mission? · Are gender and equityconsidered as overarching principles guiding the plan?
	Alignment with National and International Gender Policies: · Is the NAP anchored in existing national and international legal frameworks and covenants, such as the constitution, national gender and equity policies, human rights policies and country specific gender and equity ratified treaties? · Is there mention of adherence to any gender or equity-specific legal frameworks? · Are there ethical guidelines to ensure that AMR interventions are fair, just, and inclusive?
Objectives and Goals:	Gender and equity - Specific Objectives: · Are there specific objectives aimed at addressing gender disparities in AMR? · Are there goals related to improving equity in access to AMR-related healthcare services and interventions?
	Measurable Targets and Indicators: · Does the document include measurable targets and indicators that focus on gender and equity outcomes? · Are these targets aligned with broader health and gender equity goals?
Stakeholder Involvement and Participation:	Inclusive Stakeholder Engagement: · Were diverse stakeholders, including women, marginalized communities, and gender experts, involved in the development of the plan or policy? · Does the document outline mechanisms for continued stakeholder involvement in implementation and monitoring?
	Consultation Process: · Were gender and equity considerations explicitly included in the consultation process? · Is there evidence of meaningful participation from vulnerable groups?
Implementation Strategies:	Gender-Responsive Interventions: · Does the plan include strategies tailored to address gender-specific challenges in AMR? · Are interventions designed to reduce barriers faced by women, men, and marginalised groups? · Were gender and equityconsiderations included in the prevention and control interventions? · Are there interventions targeting men, women and other marginalised groups in the infection prevention and control mechanisms? · Are gender gaps and inequalities in the risk of exposure to AMR among healthcare workers and communities identified? · Have gender inequalities in access to quality-assured medicines, including antimicrobials, focusing on specific groups of women or men and marginalised populations who might be at a higher risk of purchasing substandard or falsified antimicrobials, been identified and addressed?
Surveillance, Data Collection:	Gender-Disaggregated Data Collection · Are there provisions for collecting and analysing AMR data disaggregated by gender, age, socioeconomic status, etc.? · Does the document mandate the inclusion of equity dimensions in AMR surveillance systems?

Monitoring and Evaluation (M&E):	Integration of gender and equity indicators in M&E: · Does the M&E framework include specific indicators to track progress on gender and equity? · Are these gender and equity indicators linked to the broader health outcomes of AMR programming?
	· Reporting and Feedback Mechanisms: · Is there a mechanism for regular reporting on gender and equity outcomes? · Does the plan ensure that findings from gender and equityanalysis are used to inform policy adjustments and interventions?
Research	Inclusion of Vulnerable Populations in Research: · Are research activities designed to include vulnerable populations to understand how AMR impacts different groups? · Does the plan advocate for research that explores gender-specific and equity-related factors in AMR?
Capacity strengthening and Training:	Gender-Sensitive Capacity strengthening: · Does the plan include training for health workers and stakeholders on gender and equity in AMR? · Are there efforts to build capacity within marginalized communities to engage with AMR initiatives?
	Continual Professional Development: · Are there provisions for ongoing training and development in gender-responsive AMR strategies?
Communication and Advocacy	Inclusive Communication Strategies: · Does the document outline strategies for inclusive communication that consider different genders, literacy levels, and cultural contexts? · Are advocacy efforts designed to raise awareness about the importance of gender and equity in AMR programming?
	Use of Media and Outreach: · Are there specific outreach strategies targeting different demographic groups to ensure broad awareness and engagement? · Are health communication strategies in the action plan gender-sensitive and accessible to diverse audiences? · How are gender norms and cultural practices that may affect AMR-related behaviours addressed in the communication strategies?
Legal and Ethical Considerations	Adherence to gender and equity legal frameworks: · Does the plan ensure compliance with national and international legal frameworks on gender equality and non-discrimination? · Are there ethical guidelines to ensure that AMR interventions are fair, just, and inclusive?
	Protection of Vulnerable Populations: · Does the document include measures to protect the rights and well-being of vulnerable groups in AMR interventions?
Sustainability and Impact:	Long-Term gender and equity Impact: · Does the plan consider the long-term impact of AMR interventions on gender equity and vulnerable populations? · Are there strategies to ensure the sustainability of gender and equity integration beyond the initial implementation phase?
	Resource Mobilisation for gender and equity Initiatives · Are there provisions for securing funding and resources to support gender-responsive and equity-focused initiatives within AMR programming?
Equity-Focused Resource Allocation:	Is there an equitable distribution of resources, ensuring that marginalised groups have access to AMR prevention and control measures? · Does the plan ensure that resources are allocated to areas with the greatest need, particularly those impacting vulnerable populations?

Annex 2: Key Reference Documents Used to Inform the Gender and Equity Assessment Framework

1. Addressing gender inequalities in national action plans on antimicrobial resistance: guidance to complement the people-centred approach. Geneva: World Health Organisation; 2024. Licence: CC BY-NC-SA 3.0 IGO. https://iris.who.int/bitstream/handle/10665/378639/9789240097278-eng.pdf?sequence=1
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Annex 3: GEAR up 12-domain framework of gender and equity inclusion assessment in policy documents

Areas of Gender and Equity Integration
· Policy vision and principles – Whether gender and equity are explicitly articulated in the vision, mission, or core values of the policy. · Alignment with legal and normative frameworks – Linkages to global frameworks, · National constitutions, gender equality policies, human rights treaties, and ethical standards for inclusive AMR practice. · Gender and equity objectives – Inclusion of gender and equity-specific goals, measurable targets, and indicators aligned to broader health equity priorities. · Stakeholder inclusion – Participation of marginalised groups, women's organisations, and gender-focused institutions in policy formulation, implementation, and monitoring. · Intersectionality – Recognition of intersecting vulnerabilities (e.g., gender, poverty, disability, rurality) and their implications for AMR risk and response. · Implementation strategies – Existence of equity-responsive and gender-tailored interventions, including in stewardship, prevention, and access to quality antimicrobials. · Surveillance and data practices – Degree of sex-disaggregated and equity-sensitive data collection in AMR/AMU surveillance systems. · Monitoring and evaluation – Integration of gender-sensitive indicators and mechanisms to track equity outcomes and guide adaptive programming. · Research and innovation – support for studies exploring gendered AMR dynamics or the needs of under-represented groups in research design. · Capacity strengthening – Training initiatives for healthcare workers and implementers on gender and equity within AMR programming. · Communication and advocacy – Inclusive messaging strategies that consider gender norms, cultural contexts, and accessibility across diverse groups. · Financing and sustainability – Provisions for equity-focused budgeting and sustainable gender-responsive investments in AMR

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