TACKLING ANTIMICROBIAL RESISTANCE (AMR) TOGETHER

Working Paper 5.0: Enhancing the focus on gender and equity

World Health Organization

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Contents

Purpose

This document aims to assist countries to take the first step towards better considering gender and equity issues in their efforts to tackle antimicrobial resistance (AMR), to inform the implementation of strategies in national action plans and contribute to improved reach and effectiveness of AMR efforts in the longer term. It is part of a series of papers being developed by WHO, FAO and OIE to build a better global evidence base for implementing AMR national action plans. This version is illustrated by examples from the health sector predominantly but will be updated with advice from the food and animal sectors in due course.

1. Beyond drugs and bugs to people: unpacking the impact of AMR on human health

Antimicrobial resistance is often talked about in terms of 'drugs and bugs', but this narrative does not always help us to really explain the issue to policy makers or to the general public. It also does not necessarily help us, as health professionals and policy advisors, to see the human face in our work and to understand how to design AMR strategies, programmes and activities in a way that will ensure their full success.

Unless we think about how AMR and interventions to address it affect people – in their day to day lives at home, work and in their communities – we may inadvertently design programmes that fail to address what really matters, thereby losing effectiveness and impact. We may also ignore or even contribute to gaps and inequities in society related to AMR.

Ensuring effective and equitable impact on AMR requires that we understand and acknowledge how men and women, and different groups in society, may be differently at risk of or impacted by AMR and the efforts to address it. It necessitates that we explicitly and deliberately design, implement and monitor our efforts in ways that can answer questions such as:

> Is the impact of AMR the same for everyone? Do any groups in society face greater or different risks of exposure to AMR or more challenges in accessing, using and benefiting from the information, services and solutions to tackle AMR?
> If yes, who, why and what can we do about it?

Instrumental to this is obviously the need to ensure that AMR surveillance and research looks beyond the aggregate to examine AMR patterns, pathways and key drivers in terms of gender and other relevant social stratifiers (e.g. occupation, income, age, geographic location, education level). It is also important to 'unpack' the social and human impact of AMR and not only from a disease or epidemiological perspective. For example, Thailand's *'National Strategic Plan on Antimicrobial Resistance 2017-2021'* (1): p.16) states

> *"… preliminary research suggests that there are approximately 88,000 cases of antimicrobial resistant bacterial infection in humans each year, of which 38,000 cases were fatal; equivalent to an economic impact of THB 42 billion* [USD 1.3 billion].*"*

Examples of how gender and other social characteristic could be relevant for understanding AMR patterns, pathways and key drivers are shown below.

Are women at increased risk of AMR exposure during pregnancy, abortion or childbirth?

Increasing antibiotic resistance may raise women's risk of exposure to AMR during pregnancy, abortion and childbirth, especially where these events take place in healthcare settings without safe or hygienic conditions. This includes, for example, a lack of adequate water and sanitation facilities, lack of access to adequate and affordable antimicrobials for treatment and diagnostics, and healthcare staff with a lack of knowledge about overuse or misuse of medicines (2). Information about the impact of AMR when fatal infections occur during abortion or childbirth is limited including in terms of which groups of women it affects disproportionately. For example, women with lower levels of education or resources (3) or who live in rural or remote areas may face greater exposure or vulnerability to such settings, and – if they contract an antibiotic resistant infection – may be less likely to receive or less able to afford the needed first and second-line treatments. The *Swedish strategy to combat antibiotic resistance* highlights the problems of AMR present in the area of sexual and reproductive health and rights, including maternal and child mortality, infections in new-borns and drug resistant gonorrhoea (4).

Urinary tract infections (UTIs) across the life-course: Are women and men of different ages at increased risk of AMR?

The increasing number of antibiotic resistant strains and expansion of efforts to tackle AMR is making the effective treatment of urinary tract infections (UTIs) more complicated (5). UTIs are the second most common infectious disease in community medical practice (6,7), and therefore an important focus for AMR. There are important differences in UTIs between females and males over the life-course in terms of sex/biology and mortality and morbidity, which are relevant to AMR. For example, UTI prevalence is generally higher in females than males overall and especially at younger ages. Whereas, at older ages, UTI prevalence in males increases and can be higher than in females (6,8,9). Importantly, however, women are more likely to have community-acquired rather than healthcare-associated UTIs. Healthcare-related acquisition is found to be associated with higher frequency of AMR and multidrug resistant *E. coli* and a higher mortality rate and length of hospital stay (10,11). Populations in different geographic regions, including within the same country, may also be at greater or lesser AMR risk, given the variation in uropathogen distribution and antibiotic susceptibility (5,7,12). As above, women and men in situations of disadvantage (economic, geographic or otherwise) may be more exposed to poor water, sanitation and hygiene practices at home or in a healthcare setting, that put them at greater risk of contracting a UTI and antibiotic resistant infections.

Are certain groups at greater risk from the growing epidemic of drug resistant gonorrhoea?

There is a need for new drugs to tackle the growing epidemic of drug resistant gonorrhoea, with most countries reporting that extended-spectrum cephalosporins (ESCs) are the only single antibiotic that remain effective for treating gonorrhoea

(13). Certain groups in society may be at greater risk of contracting gonorrhoea in general and drug-resistant strands, and may have different abilities to access and adhere to treatment guidelines. For example, a study on gonorrhoea notifications in Australia in 2007-12 found that there is an ongoing gonorrhoea epidemic for Aboriginal and Torres Strait Islander people, with the highest rates in remote areas and an overall increase in the rates and notifications in Aboriginal women in three states in metropolitan and regional areas (14).

> **Are there certain workplaces or occupations that put men or women, or specific groups, at greater risk of exposure to AMR?**

Reducing workplace and occupational exposures is an essential component of national and global efforts to tackle AMR. Where people work and what they do for or at work is strongly influenced by gender norms, roles and relations and social determinants such as their education level and where they live. It is therefore critical to consider whether some women or men may be at greater risk of AMR exposure through their work or in their workplaces.

Women as frontline health workers. Health care workers have a vital role in addressing AMR both through appropriate prescribing and dispensing of antimicrobial medicines and ensuring all patients get clean care (33). This necessitates that health workers have adequate training and work in healthcare settings with adequate and quality infrastructure and resources (e.g. water and sanitation facilities, waste disposal and laundy facilities, soap and disinfectant, hand gloves and sterilised equipment). Occupational exposure in healthcare settings may disproportionately impact women, given they make up the majority (67%) of people employed in the health and social sectors globally (15) and are often concentrated in lower-level and lower-paid jobs, not only as health workers but also as cleaners and receptionists (16,17).

Workers in agricultural settings. People employed in farming and animal husbandry may be more likely to be exposed to animals carrying resistant bacteria. For example, farmers or slaughterhouse personnel working with cattle, pigs and poultry that are infected with methicillin-resistant Staphylococcus aureus (MRSA) have a higher risk of being exposed to and/or infected by these bacteria (18–20). Depending on the livestock and the gender norms within a country, workers may be more likely to be men (cattle and pigs) or women (poultry), and depending on the livestock, farm/production setting and their working circumstances, some livestock workers will be more differentially exposed than others (21–23). Resistant bacteria from these animals and settings can also be spread from these workers to other people, such as their family members and friends (24).

2. Why a gender and equity focus is important to national efforts to tackle AMR: ensuring effective coverage

The need to take a gender and equity focus in all efforts to protect and improve population health is widely acknowledged in a variety of global mandates and instruments. This includes, for

example, the Sustainable Development Goals (SDGs), WHO's Constitution and overarching strategic plan as well as in the UN Development Assistance Framework. Further details are provided in the below box.

As well as being ethical imperatives, what drives these mandates is the need for **effective coverage**. That is, the need to ensure that health systems are providing the services that individuals and populations need, that these services are used and that they are of the necessary quality to result in the health benefits/gains intended (25). In the case of AMR and related national action plan (NAP) goals, effective coverage means ensuring that health programmes for diseases that are known for drug resistance (gonorrohea, HIV, TB, and malaria) and health services in facilities (e.g. childbirth, surgery) have some way of monitoring if there are groups in the population who are experiencing higher rates of drug resistance, exposure to AMR and or do not have sufficient access to quality assured and affordable medicines (appropriate antimicrobials) when needed (26). For example, the Kenyan National Policy on AMR highlights the drivers of AMR as the high burden of infectious diseases due to impoverished living conditions as well as the high HIV/AIDS burden and poor infection control practices in hospitals (27).

Health programmes, approaches and or services are not equally available, accessible, affordable and acceptable to all groups within the population, even if there is legislative or policy intent for universal coverage (i.e. that everyone has access to and receives services and care based on need). Some groups may be (unintentionally) left behind at different points due to barriers, and this may affect coverage and health outcomes in the longer term. For example early and accurate diagnosis for drug-resistant diseases is key to preventing development of AMR through screening, prevention and use of appropriate medicines. This relies on the government ensuring that related services, care and medicines are available, accessible, affordable, acceptable and of high quality.

Effective coverage is key to tackling AMR and the need, use and quality (efficacy) of AMR services and initiatives are influenced in dynamic and complex ways by gender and equity issues. The examples in Section 1 illustrate this influence on, for example, who and how different groups in society are at risk of AMR-related exposures and their clinical, economic and social impacts, as well as who might 'fall through the net' of prevention and treatment efforts related to health conditions and services that affect AMR. A systematic review of AMR and refugees found that for MDR-TB among Tibetan refugees in India, development could be explained by counterfeit medications, and delays in access to healthcare due to language and cultural barriers (28).

The case of drug-resistant gonorrhoea, described above, provides a good case in point. Significant challenges include the need to improve reporting of drug-resistant gonorrhoea and monitoring systems for this, together with the assessment, enforcement and strengthening of compliance with treatment guidelines. This includes better analysis of factors associated with non-compliant prescribing. It is also critical, however, to view this issue through a person-centred lens: sexually transmitted diseases occur within a social and community context and are influenced by socioeconomic and behavioural factors as well as gender norms and relations (29). Men who have sex with men (MSM) are potentially at higher risk to drug-resistant gonorrhoea

due to stigma, and dominant gender norms (for example, concepts of masculinity). The stigma surrounding STIs such as gonorrhoea can make people unwilling to seek help especially for MSM and/or transgender people, who may already feel marginalized (30) and or have previously experienced discrimination in the health care system.

Most women and many men are asymptomatic for gonorrhoea, and where a woman has symptoms they are often mild and nonspecific so that they are mistaken for bladder or vaginal infections. Women may not seek treatment because they are asymptomatic and or may be too embarrassed to ask their healthcare provider (14,31). They may also be more exposed to unprotected sex (e.g. a male partner refusing to wear a condom, or sexual violence) that exposes them to gonorrhoea, and they may have limited access to sexual and reproductive health services including condoms and STI and cancer screening.

Healthcare providers may also respond differently to men and women, or certain groups, due to cultural norms, stigma or discrimination. For example, a cross-sectional study of practitioner compliance with treatment guidelines found that women were three times as likely as men to be given a non-compliant prescription for urogenital gonorrhoea in Estonia (32).

Another example relates to attitudes, knowledge and practices related to prescribing and use of antibiotics, which may vary significantly between different countries and cultures and between different groups within a society. There is limited research and literature on differences between men and women on antibiotic use, and even less providing a more comprehensive gender analysis of how gender norms, roles and relations affect antibiotic use. Some relevant research findings, however, include that:

- In Spain, among older people (≥ 60 years) a higher proportion (57%) of women were receiving antibiotics, while among children aged 0-9 years a higher proportion of boys were receiving antibiotics (33);
- In Malaysia, higher rates of non-compliance with taking a full course of prescribed antibiotics were found among males (56.8%) compared to females (44%) (34);
- In Poland, males were more likely to state that antibiotics were effective against viruses; believed antibiotics are effective against cold and flu; and expect a prescription for antibiotics against flu and common cold. Lower age and level of education were also associated with incorrect knowledge about antibiotics (35); and
- In Portugal, men were twice as likely as women (odds ratio 2.88) to self-medicate with antibiotics (36).

In addition, a systematic review exploring the influences on parental attitudes towards antibiotic prescribing in children found studies where parents indicated antibiotic use was a time saving measure i.e. not to return to the clinician if there was no improvement in a child's health, particularly where there were issues with childcare provision and this included taking time off from work to care for an ill child resulting in the loss of income (37).

Such patterns and findings highlight the potential value-add of integrating a focus on gender and equity into AMR approaches to improve their effectiveness and impact. Specifically, this focus can be used to improve the targeting and sensitivity of strategies and contribute to achieving better outcomes. Strengthening AMR surveillance and research to better

capture disaggregated data and information (e.g. by sex, occupation, income, age, geographic location, etc.) is critical. One key component of the AMR monitoring framework is the Global Antimicrobial Resistance Surveillance System (GLASS). Launched in 2015, GLASS (38): p.V) aims to standardize AMR surveillance and highlights the need for a comprehensive approach – including disaggregating by sex and age:

> *"GLASS promotes a shift from surveillance approaches based solely on laboratory data (isolate-based data) to a system that includes epidemiological, clinical, and population-level data. This approach has been shown to increase the understanding of the impact of AMR on human health and to enable better analysis and prediction of AMR trends."*

The collective global experience to date in developing NAPs for AMR highlights the challenges faced with obtaining primary data for a situational analysis. While disaggregation of data by sex and age may be difficult, it is possible. This situation also highlights the importance of:

1. beginning to strengthen collection of *primary data* via sources such as GLASS and the Global AMR Monitoring Survey now so that in the longer term these systems can generate data disaggregated by age, sex and socioeconomic and cultural factors; and
2. consistent with the draft joint proposed approach to *Monitoring and Evaluation of AMR* (January 2018), there is potential to make use of existing indicators from both primary and secondary sources (e.g. quality of medical care, hand hygiene in medical care, access to antibiotics, patterns and trends in resistance in HIV, TB and malaria, see Tables 1.1 and 1.2 in the joint proposed approach) for assessing progress (26).

It is important that AMR research and surveillance and the monitoring and evaluation frameworks for NAPs are responsive to the evolving AMR scenario – including in relation to gender and equity issues. For example, in South Africa a form of TB resistant to at least four front-line antibiotics is reportedly spreading primarily from person to person, rather than mainly due to inadequate treatment, as previously thought (39,40).   This is reflected in Thailand's use of a developmental evaluation approach as part of its M&E framework (1): p.39).

A focus on gender and equity can also help to improve the resonance and engagement with diverse stakeholders from different sectors that are relevant to tackling AMR, through better shaping messages and identifying gaps and entry points for partnership. Thailand's National Strategic Plan on AMR is guided by a 'One Health' approach as well as a 'triangle that moves the mountain' concept that emphasizes the importance of resolving complex intersectoral issues through a whole society engagement process centering on political/policy commitment and social movement driven by evidence from knowledge generation. The Plan was informed by a situational analysis, *'Landscape of AMR situations and actions in Thailand'*, and a participatory process that included, for example, multi-sectoral workshops and a public hearing.

3. What is meant by a gender and equity focus: understanding and analyzing differences

The previous sections have highlighted some of the potential differences between males and females in the rates of AMR exposure and impact that may exist in a country, and how these intersect with other issues such as income and education, occupation and geographic location. Identifying a sex-difference, however, does not illuminate how these differences have come about or are being generated. Differences in rates or prevalence might reflect, for example, a bias in sampling where men are more likely to get tested for AMR than women or vice-versa. Alternatively, it may reflect differences in exposure due to biology, for example, women having greater exposure to AMR in health facilities during pregnancy and childbirth.

Furthermore, there may be important differences among males and among females related to other factors such as their age, where they live or their level of income, education or occupation. For example, women from higher socioeconomic backgrounds may be more likely to visit and use health services of a higher quality (both in terms of infrastructure and health worker capacity) and therefore have less risk of AMR exposure. Similarly, in a workplace setting, certain workers may be at greater risk of AMR exposure than others. In both cases, if exposed or infected, some groups of men and women may have less ability to access health care and be unwilling to, for example undocumented migrant workers. All of these factors also require analysis to build a more complete understanding of AMR patterns, pathways and key drivers.

Many national action plans for AMR include commitments to undertaking 'Knowledge Attitudes and Practices' (KAP) surveys, such as Kenya and India (27,41). The NAP for India includes a commitment to:

1. *Consolidate the existing available KAP (knowledge attitude and practice) studies across the general population, professionals in health, veterinary, pharmaceutical and environment, farmers and food processing sector (ICMR, ICAR, CHEB, PHFI, MoFPI, MoCAFPD, MoEFCC)*
2. *Conduct behavioural studies and KAP surveys amongst general population (as a priority), health professionals (including AYUSH), veterinary professionals, pharmaceutical industry, environment professionals, food processing sector and farmers (ICMR, ICAR , CHEB, PHFI, MoCF, MoFPI, MoCAFPD, MoEFCC)* (41): p.24)

The expected output is that India will have baseline and trends in knowledge, attitude, practices and behaviour of different segments of populations on AMR and its use, in the general population, as well as farmers, professionals and industry. This can be used to tailor health education, awareness raising and behavior change strategies for increased effectiveness.

Findings around behaviour change and antibiotic use such as the study that looked at parental use of antibiotics (37) provide an important example of how a gender analysis might be useful. Health and care services tend to depend on women as unpaid, informal educators and carers particularly for children and sick family members. The systematic review highlighted that potential anticipated loss of time from work (the burden of which is more likely to fall on women than men) is one factor that influences parental demand for antibiotics. Here behaviour change

and health education strategies that rely solely on educating or informing mothers about why antibiotics are not effective are unlikely to be successful without also addressing the underlying drivers of mother's or parental behaviour. Furthermore if health education and behaviour change strategies rely on traditional gender norms of women as informal carers and conveyers of health messages it is likely to create further barriers to uptake of the message because it does not take the everyday reality of women into account. Likewise, the findings from the Polish study highlighted that young men are an important target audience for behaviour change (35) (see Section 2). Targeting parents or mothers in this situation may also be ineffective. A gender analysis can be used to review health education and behaviour change strategies to check that they are not gender blind (i.e. ignoring the differences in opportunities and resource allocation for women and men) and or don't reinforce gender inequalities by relying on traditional gender norms and stereotypes e.g. assuming that young men are not interested in healthy behaviours and are not amenable to behaviour change (16).

Clarifying key concepts related to gender analysis

Gender refers to the socially constructed characteristics of women and men – such as norms, roles and relationships of and between groups of women and men. It varies from society to society and can be changed.

Gender norms refer to beliefs about women and men, boys and girls that are passed from generation to generation through the process of socialization i.e. what it is to be a woman. Norms change over time and differ in different cultures, contexts and populations. Gender norms can shape inequality if they reinforce: a) mistreatment or oppression of one group or sex over the other; or b) differences in power and opportunities. **Gender roles** refers to what males and females are expected to do (in the household, community and workplace) in a given society. **Gender relations** refers to social relations between and among women and men based on gender norms and roles. Gender relations often create hierarchies between and among groups of men and women that can lead to unequal power relations and gender inequities.

Sources: Gender [Internet]. Gender, equity and human rights. 2018 [cited 2018 Jun 8]. Available from: http://www.who.int/gender-equity-rights/understanding/gender-definition/en/; WHO. *Gender mainstreaming for health managers: a practical approach. Facilitators' Guide.* France: WHO; 2011.

The next step for understanding therefore requires **gender analysis**. Gender analysis in health examines how biological and sociocultural factors interact to influence health behaviour, outcomes and services and uncovers how gender inequality affects health and well-being. It is used to identify, assess and inform actions to address gender inequality arising from: i) different gender norms, roles and relations; ii) unequal power relations between and among groups of men and women, and iii) the intersection of contextual factors such as sexual orientation, ethnicity, education or employment status with gender. Definitions of relevant key concepts are provided in the box and **Annex 1**.

4. Looking at your national action plan on AMR

Countries have committed to developing a national action plan on AMR and WHO and other partners are working to support national health authorities to develop and implement them. These national action plans therefore present an important entry point through which to consider and strengthen the gender and equity responsiveness of national and global efforts to tackle AMR. So, where to begin?

Step 1. All plans have a situational analysis: What does this show?

Questions to examine the situational analysis, including data on resistance

Are there any differences between males and females?

What, if anything, does the situation analysis tell you about differences between other groups, for example, different age groups, geographical locations, educational levels, or occupations or workplace settings (or other relevant factors for your context)?
Is there any information about this?

If there is no information about differences in relation to AMR in the situational analysis:

1. What information is available about AMR-related health care and conditions e.g. childbirth, surgery and/or drug resistant diseases such as TB, HIV or malaria? Is there information about differences between males and females, or different groups in the population in relation to childbirth e.g.for inequalities in maternal mortality see the WHO health equity assessment toolkit which has data for many countries on maternal mortality? Is there a health inequalities profile for the country? Does this identify specific groups in the population who might be more likely to experience inequalities in health outcomes?
2. What information is available from One Health partners such as FAO on the agriculture and food production industries? For example, FAO has relevant information as part of its gender assessment series e.g. National gender profile of agriculture and rural livelihoods for Botswana. This includes information about differences between men and women in livestock ownership. Such information may provide an entry point for beginning to think about differences between men and women in terms of exposure to AMR.

Further exploration and investigation of other resources and perspectives

What do you think the differences identified reflect or mean? What do others think?

Are there any in-country studies that include information on differences in AMR between males and females and by other characteristics? What does this tell you?

Could the differences be due to bias in testing or to differences in biological exposure between men and women?

Where no AMR specific information is available about differences between men and women or different groups, what does other information tell you in terms of inequalities and differences? For example, inequalities in maternal mortality in rural areas or inequalities in MDR-TB among men with lower education. Do you think these inequalities are likely to be mirrored in terms of exposure, outcomes and consequences for AMR for the same groups e.g. women in rural areas likely to be in birthing facilities with limited WASH?

What other information is available to help you identify potential differences or to understand the differences you find? For example, are there any studies from other countries with a similar context that provide information that could help you understand how to begin to disaggregate information? See, for example, studies about antibiotic use or misuse from other countries that have disaggregated information.

Start by identifying and mapping what is available and what gaps exist. Other potential sources of data, for example, include patient journeys and patient groups and knowledge, awareness and practice surveys. Discussion with other stakeholders, such as frontline health workers or occupational health and safety offices may provide you with additional important information.

Examples of things you can do in your national action plan on AMR

i. Use available information on population diversity to target and refine behaviour change among the general population and/or certain occupations

For example, tailoring health behaviour campaigns to reach young men around antibiotic use or delivering messages with different media or in different forums e.g. reaching young men through the forums and places where they spend a lot of time e.g. sporting venues, cafes. There are lessons that can be learnt from the HIV community e.g. providing sexual and reproductive health services, condoms and testing along major truck routes and close to mining communities and also engaging communities through other means such as theatre, radio and/or sporting activities.

Increasing the reach of AMR behaviour change programmes by working with other health programmes that impact on AMR such as HIV, TB, Malaria, STIs, maternal health and/or adolescent health to test or promote key AMR messages during their events e.g. World days for the different health programmes including human resources for health.

ii. Applying available information from (i) and other studies (inequalities, AMR-related conditions, KAP surveys) to support M&E and strengthen the collection and use of primary and secondary sources in M&E for AMR.

Using existing social participation mechanisms (national plans often include a commitment or mechanism for community or social participation) to either (a) collect better information on differences between males and females, age groups, etc and/or (b) collect information about knowledge, attitudes and practices in relation to antibiotic use among the general population. These mechanisms can be used to 'test' whether inequalities or differences between males and females or social groups found in other health conditions (e.g. TB) apply to AMR. Are groups already known to experience inequities in access to health services the same groups not getting access to appropriate antibiotics on time or being screened? Use this information to strengthen M&E efforts including better information on any age, sex or sub-group differences. Gaps in knowledge can also be used to strengthen M&E by informing the scope of additional studies or operational research by partners. Where primary data on AMR from GLASS is available and disaggregated to sub-national level – use it to do some parallel analysis e.g. do some districts seem to have higher reported rates, and what is the socioeconomic profile or educational levels of these districts (DHS data etc). Are these districts for targeting or does it represent a bias in reporting and data quality from some districts compared to others? As indicated earlier in the guidance, the availability and use of disaggregated data from primary sources will not be feasible in most countries for some time to come. However mapping of the gaps in data in relation to potential groups experiencing inequities is an important start.

iii. Use this information to have a discussion within the health system

Use this information to have a discussion within the health system – intrasectoral action. Are there potential facility hotspots or community hotspots for AMR – either based on primary data or parallel analysis e.g. districts with higher maternal mortality rates (see WHO HEA toolkit). Data may not be available at facility level about AMR or AMR-related conditions. However disaggregated data at subnational level on inequalities in outcomes such as maternal mortality or HIV might be used to begin exploring inequalities in AMR. For example, higher maternal mortality rates in some districts – is the problem equal across the district or only in some places? What is the condition of the health facilities in these districts? Is there any information about AMR in relation to causes of maternal mortality? Do the health facilities have limited WASH facilities? These issues can be explored using document review, interviews with health workers and communities. Other questions or issues to be looked at in a similar way include: whether males are not accessing health services but just buying over the counter drugs such as antibiotics; and whether groups in

the community already known to experience inequities in access to health care and essential medicines are the same groups who are not getting antibiotics and/or access to antimicrobial drugs. You could use key forums within the health system to have these discussions e.g. meeting with professional associations (nursing, medicine, pharmacists) and or as part of other government work on health systems strengthening efforts including around human resources for health, including training and professional development schools.

| iv. Use this information for intersectoral and One Health efforts |

Use this information for intersectoral and One Health efforts – to improve preventive efforts among workers in certain occupations who are more likely to be exposed and/or not benefit from prevention or antimicrobials. For example, a very different approach will be required to reach women who are small scale poultry farmers compared to large scale commercial agricultural ventures which are likely employ men. This might include improving information about which occupations, whether males or females are more affected, what are the barriers to changing practices among workers (see the FAO gender profiles in resources). See Annex 2 for a list of resources relevant to the health, food and agriculture sectors.

Finally AMR can be spread from animals to humans via contaminated water or soil, and contact with or consumption of contaminated meat (24). Again, it is worth looking at groups known to experience social inequities within the country to see if they also experience inequities in exposure to AMR – use this information to discuss with local populations, local government and environmental protection agencies, about the situation and to identify how best to address e.g. understanding why some groups may continue with inappropriate use of antibiotics among livestock.

5. Concluding thoughts

This guidance sought to show some ways to begin thinking about how AMR and interventions to address it affect people – in their day to day lives at home, work and in their communities – using a gender and equity focus. The way forward is not necessarily straightforward given AMR is a cross-cutting issue and given the limitations with existing primary sources of data. However, it is provided as a way of beginning to understand and acknowledge how men and women, and different groups in society, may be differently at risk of or impacted by AMR and the efforts to address it. We expect that the guidance will evolve as it is applied and contributes to improved knowledge about how to design AMR strategies, programmes and activities in a way that will ensure their full success by better considering gender and equity issues.

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Resources

1. Glossary
2. Resources for assessing gender and equity

Annex 1. Glossary

Antimicrobial resistance (AMR): The ability of a microorganism (like bacteria, viruses, and some parasites) to stop an antimicrobial (such as antibiotics, antivirals and antimalarials) from working against it. As a result, standard treatments become ineffective, infections persist and may spread to others (42).

Gender: Refers to the socially constructed characteristics of women and men – such as norms, roles and relationships of and between groups of women and men. It varies from society to society and can be changed. While most people are born either male or female, they are taught appropriate norms and behaviors – including how they should interact with others of the same or opposite sex within households, communities and work places. Gender norms, roles and relations influence people's susceptibility to different health conditions and diseases and affect their enjoyment of good mental, physical health and wellbeing. They also have a bearing on people's access to and uptake of health services and on the health outcomes they experience throughout the life-course (43).

Gender analysis in health: Examines how biological and sociocultural factors interact to influence health behavior, outcomes and services. It also uncovers how gender inequality affects health and well-being of both men and women (44).

Gender norms: Refers to beliefs about women and men, boys and girls that are passed from generation to generation through the process of socialization. They change over time and differ in different cultures, contexts and populations. Gender norms can shape inequality if they reinforce: a) mistreatment or oppression of one group or sex over the other; or b) differences in power and opportunities (45).

Gender roles: Refers to what males and females are expected to do (in the household, community and workplace) in a given society (45).

Gender relations: Refers to social relations between and among women and men based on gender norms and roles. Gender relations often create hierarchies between and among groups of men and women that can lead to unequal power relations, disadvantaging some groups over others – e.g. women who are socially excluded because of poverty, low education etc. Socio-political and economic systems and processes such as racism, sexism, homophobia (e.g., discriminatory policies, etc.) shape gender and gendered experiences, contributing to inequities in gender relations (45).

Gender equality: Refers to women and men having equal conditions and opportunities to realize their rights and potential to be healthy, to contribute to health development and benefit from the results. Gender inequality puts the health of women and girls at risk globally. Improving gender equality in health enables the improvement in the health of women (46).

Gender equity in health: Gender equity refers to fairness and justice in the distribution of benefits, power, resources and responsibilities between women and men to allow them to attain their full health potential. The concept recognizes that women and men have different needs and opportunities that impact on their health status, their access to services and their contributions to the health workforce. It acknowledges that these differences should be identified and addressed in a manner that rectifies the imbalance between the sexes (Adapted from (45,47). Both gender equality and gender equity are needed to achieve health equity (46,48). WHO, 2011)

Gender in health: Looks at the roots of health-seeking behavior. It aims to improve health outcomes for both female and male populations, regardless of age, ethnicity, religion and socioeconomic status. It cannot be assumed that health programs and policies affect men, women, boys and girls in the same way. Differences and specific vulnerabilities must be identified and addressed in health programs and policies in order to make progress towards health for all (44).

Health equity (and equity in health): Equity is the absence of avoidable, unfair, or remediable differences among groups of people, whether those groups are defined socially, economically,

demographically or geographically. "Health equity" or "equity in health" implies that ideally everyone should have a fair opportunity to attain their full health potential and, more pragmatically, that no one should be disadvantaged from achieving this potential (49).

Sex disaggregated data: Refers to data disaggregated by biological/physiological sex of a person given male or female biology can make a person more physiologically vulnerable to some conditions. In the case of AMR for example, a higher prevalence of UTIs in females, especially young females due to anatomical features such as close proximity of the female urethral meatus to anus, short urea (6). In older men there is sometimes been a higher prevalence due to factors such as prostate enlargement and neurogenic bladder (7).

Social determinants of health: The conditions in which people are born, grow, live, work and age, including the health system. These circumstances are shaped by the distribution of money, power and resources at global, national and local levels, which are themselves influenced by policy choices. Gender is a social determinants of health. The social determinants of health are mostly responsible for health inequities – the unfair and avoidable differences in health status seen within and between countries (50).

The **right to health**: Refers to "the right to the highest attainable standard of health" and requires a set of social criteria that is conducive to the health of all people, including the availability of health services, safe working conditions, adequate housing and nutritious foods. Realization of the right to health is closely related to that of other human rights, including the right to food, housing, work, education and non-discrimination; equality; access to information; and participation. The right to health comprises both freedoms and entitlements. Freedoms include the right to control one's health and body (e.g. sexual and reproductive rights) and to be free from interference (e.g. free from torture and from non-consensual medical treatment and experimentation). Entitlements include the right to a system of health protection that gives everyone an equal opportunity to enjoy the highest attainable level of health. Health policies and programs have the ability to either promote or violate human rights, including the right to health, depending on the way they are designed or implemented. Taking steps to respect and protect human rights upholds the health sector's responsibility to address everyone's health (51).

Annex 2. Resources for assessing gender and equity.

1. [Gender mainstreaming for health managers: a practical approach](#) (2011). This link takes you to the webpage which includes the manuals for facilitators and the participant notes.

2. WHO Health Equity Assessment Toolkit - a software application that facilitates the assessment of within-country health inequalities, including disaggregated data related to reproductive, maternal, newborn and child health interventions and outcomes indicators for a selected country.

3. FAO gender webpage - http://www.fao.org/gender/en/ - specifically National gender profiles of agriculture and rural livelihoods.

4. [SDGs and Gender Equality: UN Interagency Guidance Note for the Europe and Central Asia Region](#) (2017). This guidance note aims to provide user-friendly guidance on integrating gender equality and the empowerment of all women and girls in the nationalization and localization of the Sustainable Development Goals in the Europe and Central Asia region. The document is intended for United Nations Country Teams and can be shared with regional partners (e.g. European Union, World Bank, Asian Development Bank, Council of Europe, civil society organizations and others) to promote policy and programmatic synergies.

5. UN Joint Programmes - Integrating gender issues in food security, agriculture and rural development
    http://www.fao.org/docrep/013/i1914e/i1914e00.pdf

6. Strengthening Sector Policies for Better Food Security and Nutrition Results: Gender Equality. Policy Guidance Note
    http://www.fao.org/policy-support/resources/resources-details/en/c/885777/

7. CEDAW – A tool for gender-sensitive agriculture and rural development policy and programme formulation
    http://www.fao.org/docrep/017/i3153e/i3153e.pdf

8. Guidelines for collecting data for sex-disaggregated and gender-specific indicators in national agricultural surveys
    http://gsars.org/wp-content/uploads/2017/10/GENDER-FINAL_Guideline_May2017-Completo-10-1.pdf

9. Gender in Food and Nutrition Security (e-learning course)
    http://www.fao.org/elearning/#/elc/en/course/FG

10. Developing gender-sensitive value chains - A guiding framework
    http://www.fao.org/sustainable-food-value-chains/library/details/en/c/456603/

11. Developing capacities in gender-sensitive rural advisory services - A training of trainers manual
    http://www.fao.org/documents/card/en/c/1f768c62-915f-480a-97b8-9e9f934f4fd5/

12. Governing land for women and men – A technical guide to support the achievement of responsible gender-equitable governance of land tenure
http://www.fao.org/3/a-i3114e.pdf

13. Gender, food security and nutrition in protracted crises
http://www.fao.org/3/a-i6630e.pdf

14. Striving for gender equality in emergencies
http://www.fao.org/emergencies/resources/documents/resources-detail/en/c/198364/