TACKLING ANTIMICROBIAL RESISTANCE (AMR) TOGETHER

Working Paper 5.0: Enhancing the focus on gender and equity

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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.

Examples of key gender, equity and human rights mandates

Sustainable Development Goals (SDGs): Reducing inequity is a cross-cutting aim of all SDGs with equity and gender equality also end goals in their own right (SDG 5 and 10 respectively). AMR also impacts on other SDGs that are related to, impact on and/or are influenced by gender and equity. As noted during the 71st meeting of the United Nations General Assembly (2016), AMR may impact upon the achievement of specific SDGs, including SDG 1 (end poverty), SDG 2 (end hunger, achieve food security and improved nutrition), SDG 3 (ensure health), SDG 6 (ensure water and sanitation), SDG 8 (promote economic growth, employment, and decent work), SDG 12 (ensure sustainable consumption and production) and SDG 17 (strengthen partnership) (24).

WHO: Reducing health inequities is embedded in WHO's Constitution. The 13th General Programme of Work (2019-2023) commits to a strategic shift for "stepping up leadership" on gender equality, health equity and human rights, among other aspects. It commits WHO to gender mainstreaming including not only sex-disaggregated data but also bringing a gender lens to needs analysis and programme design across its programmes and offices.

United Nations Development Assistance Framework (UNDAF): UNDAF Guidance (2017) and accompanying programming principles refer to gender equity and women's empowerment, and human rights, and leaving no one behind, as core principles for integrated programming. UNDAFs represent formal agreements between UN Country Teams including WHO and national governments.

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