Conducting research into the intersections of gender and antimicrobial resistance

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GEAR up (Gender and Equity in Antimicrobial Resistance) is a consortium of partners funded by the Fleming Fund and led by Liverpool School of Tropical Medicine (UK) in partnership with LVCT Health (Kenya), CeSHHAR (Zimbabwe), UHAS (Ghana), HERD International (Nepal), and JPGSPH (Bangladesh). Our approach is to catalyse action on equity and antimicrobial resistance (AMR) across key areas, including policy, analysis of surveillance data, research, and supporting communities of action. We see these as foundational steps to improve our knowledge and increase awareness of the equity dimensions of AMR, and to guide and inspire action.

The release of WHO's guidance, *'Addressing gender inequalities in national action plans on antimicrobial resistance'*, provided an opportunity for GEAR up to translate global recommendations into country-level work. This case study describes research led by GEAR up on topics of gender, equity and AMR in GEAR up focus countries

WHAT ARE THE RECOMMENDATIONS FROM WHO'S GUIDANCE?

Recommendation 3
Promote research to strengthen the evidence base on the intersections between gender and AMR
Recommendation 9
Report on patients' sex, age and, where feasible, other social stratifiers as part of routine surveillance systems on AMR and antimicrobial use.

ZIMBABWE

What is the problem/need?

Key population groups, including sex workers in their diversity (female, male, transgender) and high-risk men/partners of female sex workers, face a disproportionately high risk of contracting different types of sexually transmitted infections (STIs) including drug-resistant variants. Research has shown that, if left untreated or poorly managed, STIs can facilitate HIV transmission. Key populations' susceptibility to AMR is mediated by a variety of intersecting factors including gender, sex, culture, socio-economic status and age, among others. However, gender and equity issues for these key population groups continue to be overlooked, resulting in them being sidelined in health interventions, and data on the burden of AMR disaggregated by various social stratifies are still limited across contexts.

Healthcare workers practicing diagnostic swab collection

AMR has been notably prevalent in different varieties of Neisseria Gonorrhoea (N. gonorrhoea), complicating its control and management. In view of the ever-diminishing number of antimicrobial drugs to effectively treat gonorrhoea, there is an urgent need to understand the progression of drug resistance in gonorrhoea as well as the related epidemiological, socio-economic and cultural drivers of this infection.

What steps were taken?

Building on an ongoing initiative by the Zimbabwe Ministry of Health and Child Care and partners, AMR surveillance for N. gonorrhoea in selected key population groups focused on sex workers in their diversity (female, male, transgender) and high-risk men/partners of female sex workers.

GEAR up collected swabs from a sample (n=525) of key population patients attending CeSHHAR dedicated clinics in Harare, Bulawayo, Mutare and Masvingo, presenting with possible gonorrhoea symptoms and sent these for laboratory testing at the National Microbiology Reference Laboratory in Harare. Demographic, behavioural and clinical data were collected to enable an analysis of laboratory results by these data.

What was the result?

Female sex workers contributed the largest proportion of samples, reflecting the general distribution of clients seen by the CeSHHAR key populations programme. Although data analysis is still underway, initial indications point to a 15% gonorrhoea positivity rate, meaning that the current practice of syndromic management of clients (i.e. making clinical decisions based on a patient's symptoms and signs, rather than on etiologic diagnosis), results in substantial misdiagnosis and overtreatment.

This has implications for antimicrobial resistance; Zimbabwe recently updated its treatment of gonorrhoea-related symptoms from 500mg to 1g ceftriaxone IM (intramuscular administration) due to a variant of drug-resistant gonorrhoea. If a client without gonorrhoea receives this optimum dose, they are likely to develop resistance if/when they eventually contract gonorrhoea. The findings, though preliminary, highlight the need for low-cost point-of-care (POC) diagnostics to refine STI management and improve client outcomes, as recommended by the recently updated WHO STI management guidelines. Indeed, CeSHHAR is currently part of initiatives to inform the introduction of STI POC diagnostics in Zimbabwe and other low-resource settings.

BANGLADESH

What is the problem/need?

Bangladesh has one of the highest AMR prevalence in Southeast Asia. To date, there is limited research that explores AMR and the specific intersecting equity issues that characterise informal urban contexts. Most research has thus far focused on clinical or surveillance aspects rather than structural and social determinants of AMR and antibiotic use.

Nurses receiving training

What steps were taken?

We carried out a qualitative study in the urban informal settlements of Dhaka, Bangladesh, with community members (18+ men and women) and informal healthcare providers (local drug store owners and semi-skilled in drug dispensing, community health workers etc.) to explore the socioeconomic causes of antimicrobial resistance, their understanding and awareness of use of antibiotics and AMR, and challenges and barriers to recommended use. In total, 26 in-depth interviews and six focus group discussions were conducted, data stored and analysed from two informal settlements in Dhaka, one in a generally mixed-use land area in the city-centre, and another from an industrial area on the outskirts of the city.

What was the result?

The findings indicated a high risk of contracting infectious diseases in urban informal settlements. Children and the elderly were the most vulnerable population, considering their weak immune systems. Female workers in the readymade garments industry were found vulnerable to recurring, common Urinary Tract Infections and other injuries, related to work pressure and prolonged seating position, which restricted them from taking health breaks (going to the toilets or drinking clean water). Findings related to healthcare seeking behaviour were congruent with global evidence base, which shows that although men may have autonomy, they still delayed seeking care in comparison to women and consulted informal service providers to buy and consume antibiotics. Women, on the other hand, often used expired/leftover antibiotics and prescriptions for themselves and their children. Poverty appeared as an underlying factor in these health-seeking behaviours and antibiotic consumption practices, which can be conducive to increased risks of AMR.

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