ONE HEALTH – STRENGTHENING HEALTH CARE MANAGEMENT IN BRAZIL

Introduction

The World Health Organization has classified antimicrobial resistance (AMR) as a threat to global health and development and called for countries across the globe to present National Action Plans (NAPs) for addressing and reducing this threat. AMR research is primarily quantitative, focusing on biomedical or economic evidence. The aim of this project was to provide insights to those charged with designing and implementing NAP-based interventions that are applicable and appropriate to the Brazilian context.

Our methodological approach was innovative in Brazil: first, this was the first qualitative project employing a systems-based One Health approach. All groups of actors involved with antibiotic prescription and provision were included; human and companion animal relationships of healthcare users were explored; and both top-down and bottom-up perspectives were employed to assess the situation. Second, we focused on how participants construct and frame their experiences, perceptions, beliefs, attitudes and knowledge about antibiotic use and AMR. Third, we examined AMR in primary care taking a social science perspective, as research funding in Brazil has been available principally for studies of pathogens, the economic implications of AMR and antibiotic use in hospital environments. The innovative aspects of this project are geared towards presenting viable challenges to the existing mindset of policymakers and the healthcare professionals charged with carrying out policies to address AMR.

We focused on the challenges and practices associated with antibiotic (over)prescription and knowledge about AMR, as well as the structural constraints affecting the incidence of AMR, in three populations: *a) primary care users with companion animals; b) the prescribers and providers of antibiotics;* and *c) the "stakeholders" (e.g., policy-makers, academicians, technocrats) involved in the planning of the Brazilian National Action Plan or the development or implementation of AMR policies or interventions.* The interviews with participants of the first two groups were held in a district within the municipality of São Paulo. The participants of the third group were not limited to a particular geographic region. In total, in-depth interviews were conducted with more than 70 participants. See the following article for a fuller description of the project:

> Corrêa JS, Zago LF, Silva-Brandão RRD, Oliveira SM, Fracolli LA, Padoveze MC, Currea GCC. Antimicrobial resistance in Brazil: an integrated research agenda. Rev Esc Enferm USP. 2022 Feb 16;56:e20210589. doi: 10.1590/1980-220X-REEUSP-2021-0589.

Results

The individual and the community

The knowledge and experience frameworks created by laypersons regarding AB prescriptions and AMR, the result of life experiences of the users and others in their community, differ from those of HC professionals and are not recognized as valid by the latter.

For an in-depth examination of this subproject and these findings, consult:

> Zago, LF, Correa, JS, da Silva-Brandão, RR, et al. Experiences of antibiotic use among Brazilian healthcare users: An exploratory study. *Health Expect*. 2023; 26: 343- 354. doi:10.1111/hex.13664

Prescribers and providers

a. In-locus factors influencing antibiotic prescriptions and dispensing practices are intertwined with individual accounts of risk management, systemic contradictions and problems in the national health system. Health professionals tend to be aware of the risks related to AMR; however, they also tend to prescribe more antibiotics in situations in which they see that patients have limited resources and lack of hygiene practices, or they have companion animals.
b. While Brazil has developed its National Action Plan, none of the interviewees were aware of its actions, nor the importance of integrating human-animal health within the scope of One Health interventions in primary care. Thus, interventions that consider local and national research and educational assets, social and political efforts and integrated health agendas are necessary to ensure the adoption and efficiency of longitudinal local-based interventions.

For an in-depth examination of the results, consult:

da Silva-Brandão RR, de Oliveira SM, Correa JS, Zago LF, Fracolli LA, Padoveze MC, et al. (2023) Coping with in-locus factors and systemic contradictions affecting antibiotic prescription and dispensing practices in primary care–A qualitative One Health study in Brazil. *PLoS ONE* 18(1): e0280575. https://doi.org/10.1371/journal.pone.0280575

Stakeholders

a. The overall finding is that AMR is not viewed as an immediate priority in the federal government.
b. The different dimensions of AMR should be recognized at the policy level to make the problem and its impacts more visible and to promote effective action; expertise from the field of implementation science should not be overlooked.

For an in-depth examination of the results, consult:

Correa JS, Zago LF, da Silva-Brandão RR, de Oliveira SM, Zago LF, Fracolli LA, Padoveze MC, Córdoba G. (2023) The governance of AMR in Brazil: challenges for the development and implementation of a One Health agenda. *Global Public Health (RGPH).* https://doi.org/10.1080/17441692.2023.2190381

Conclusions

While AMR is seen as a global threat requiring a multidisciplinary approach, to date the main focus has been on quantitative, laboratorial analyses. This has certainly been the case in Brazil. Our qualitative, social science approach has placed human behavior, knowledge and attitudes at the center of the research, recognizing their importance in policy development and implementation. The inclusion of user perspectives has also been informative in confirming that overcoming AMR is not simply a matter of employing top-down information transference protocols.

The value of the data generated by the project has been recognized by the Brazilian Ministry of Health, as plans are in place to incorporate our perspective in the implementation stage of the country's National Action Plan. Thus, our efforts to change the AMR mindset seem to have achieved their goal, at least in some measure.

In our study, health care users constructed their knowledge frameworks through a combination of medical and lay knowledge, giving greater credence at times to their own experiences and those of their acquaintances. They say they know their bodies better. The health professionals weigh health policies with their knowledge of community conditions and their patients and, at times, give greater credence to their own experiences and knowledge to make an exception to the established policies. At the level of governance, policymakers use their knowledge of the resources and wide range of health issues facing Brazil to view AMR as one of many priorities. By bringing all groups into the planning process to co-construct the AMR agenda would be beneficial.

Finally, the innovative approach of AMR research with a social science approach, contributed to advance the research career of the three research assistants that have already started to be recognized as social science experts in the field.

Recommendations

One of our strongest recommendations is that health care users and practitioners be included in policy development, not merely as first-hand recipients of information, but as full partners and co-constructors of policy. We propose that AMR be recognized as requiring a cross-cutting area of intervention, connecting it with other priority health agendas and with national health policy plans, rather than viewing it as a competing, separate agenda.