



An overview of antimicrobial stewardship programmes in Latin America

Gabriel Levy Hara

Infectious Diseases Unit, Hospital Carlos G Durand, Buenos Aires, Argentina. Independent Advisor for Studies of use of antibiotics and Antimicrobial Stewardship Programs in Latin America, PAHO/WHO

Antimicrobial stewardship programmes (ASPs) are relatively new in Latin America compared with other parts of the world such as Australia, the USA and Europe. However, around three years ago some individual hospitals in various Latin American countries began to create ASPs in the absence of official policies and support from national governments.^{1,2}

The first international survey evaluating the existence of ASPs was conducted jointly by the International Society of Chemotherapy (ISAC) Antimicrobial Stewardship (AMS) Working Group and the ESCMID Study Group for Antibiotic Policies (ESGAP) in 2012 and included 103 responses from Latin American countries.³ Most responders were from Argentina (39), Peru (18), Brazil (9), Venezuela (9), Chile (8), Colombia (6) and Uruguay (5). More than half were teaching, tertiary care hospitals. Overall, 46% Latin American Countries

already had an ASP compared with 66% in Europe, 67% in the USA and 56% in the “rest of the world”. In general, ASPs were fairly new in Latin America (median duration was three years). Brazil (67%), Chile (88%) and Colombia (83%) had more ASPs in place, although figures were too small to establish real comparisons between countries. The main stated objectives of ASPs were comparable with the rest of the world: to reduce or stabilise resistance (87%), reduce the amount of antibiotic prescribing (53%) and improve clinical outcomes (49%). In contrast, dedicated weekly hours of AMS team members were different from other regions. For example, Latin American hospitals reported a mean of 9 hours of a pharmacist with experience in antimicrobials or infectious diseases (ID) (world mean = 18 hours), 12 hours of ID physician (world mean = 10 hours), and 7 hours of a clinical microbiologist (world mean = 9 hours). Similar to other low- and middle-income regions however, nurses had a critical role: 14 hours / week dedicated to the ASP, compared with a mean of 6 hours world-wide. The main barriers reported to delivering a functional and effective ASP were the lack of personnel or funding, opposition from prescribers, lack of information technology support and/or ability to get data and other higher-priority initiatives. These obstacles were similar to the rest of the world.

Recent progress in the Americas

The World Health Organization (WHO) and its regional office for the Americas, the Pan-American Health Organization (PAHO), have approved action plans for the containment of antimicrobial resistance (AMR)⁴. The design of the National Action Plans in collaboration with the WHO Global Action Plan proposal is currently advanced in most Latin American countries.

In September 2017, PAHO began a project to implement ASPs in Latin America. This initiative began with contacting the identified focal point from the Ministry of Health (MOH) in every country interested in participating in the project, requesting the selection of five to ten hospitals initially.

The *kick-off* included a point prevalence survey of antibiotic use (PAHO/WHO HAMU PPS 2018), adapted

“ASP major components are leadership, human resources, microbiology laboratories and robust pharmacy services.”

from the methodology proposed by WHO in 2017⁴. Once hospitals are selected by the MOH, teleconferences to present the overall project are held. During these initial meetings, participants exchange ideas on the following: previous experiences in AMS; revised benefits and objectives of ASPs; members of the AMS team; strategies to co-opt prescribers overall

the facility; sensitisation of stakeholders and possible strategies to implement the programme according to each hospital setting and baseline situation. One of the key messages is that implementing an ASP requires time, patience and the recognition that we need to take a step-by-step approach for every issue (e.g., strategies, interventions, indicators, etc).

Simultaneously with the preparation and training to perform the antibiotic point prevalence survey, a baseline check-list related to AMS is requested. This tool includes questions regarding core elements of ASP as a hospital situation, authority support, team members, the existence (or not) of any AMS strategies, clinical practice guidelines, training on antimicrobial use, indicators of antimicrobial consumption, etc. In the second part of the check-list, coordinators are requested to propose which interventions (for example, related to prescription control, education, guidelines) they would be able to implement in their scenario. Later in the process of ASP implementation, virtual meetings

are held to discuss advances in the programmes and the main barriers. The involvement of many hospitals from the same country contributes to synergistic working: those with more advanced ASPs provide their experience and potential solutions to those who are just beginning. By March 2019, there are more than 30 ASPs being implemented across El Salvador, Costa Rica, Perú, Paraguay and Cuba. Mexico is recruiting facilities to begin these projects. During this first year of the PAHO project it has been evident that, in general, stewardship initiatives are well-received by prescribers. There are essentially two prescription-based strategies to control antimicrobial use: pre-authorization and post-prescription review⁵. Considering that the majority of hospitals are taking their first steps they are incorporating a pre-authorization strategy for prescribing certain antimicrobials (usually, third generation cephalosporins, piperacillin/tazobactam, carbapenems, colistin, fosfomycin, tigecycline, linezolid and new antifungal agents – equinocandins, voriconazole and lipid formulations of amphotericins). Audit and feedback or joint wards rounds are not in general use, despite their well-known benefits. The main barriers observed both in the baseline checklists as well as in the follow-up virtual meetings are similar to those reported in most low- and middle-income economies on a global scale:^{3,7,8}

- Low institutional awareness regarding the problem of AMR and the need for prudent use of these agents.
- Scarcity of available human resources to work on AMS.
- Variable degrees of resources assigned to clinical microbiology laboratories.
- Absence of involvement and commitment of hospital pharmacies in AMS initiatives.
- Training on proper use of antimicrobials is usually limited and not continuous, due to a low number of health care workers in the AMS team. Then, incidental education predominates over structured and programmed interventions.

Recommendations for implementing antimicrobial stewardship programmes in the region

By November 2018, during the World Antibiotic Awareness Week, PAHO, together with the Global Health Consortium (GHC) of the Florida International University (FIU), launched the Recommendations for Implementing Antimicrobial Stewardship Programmes in Latin America and the Caribbean: Manual for Public Health Decision-Makers⁶. Its aim is to collaborate with Public Health authorities in their fight against AMR. This manual examines the concept and benefits of ASPs, and describes their major components: leadership, human

resources, microbiology laboratories, and robust pharmacy services. Specific interventions are described, as are the ethical and legal issues related to these programmes. Primary health care interventions are given special attention as over 90% of antimicrobial use occurs at the community level, where high antibiotic use may reflect over-prescription, easy access through over-the-counter sales and, more recently, Internet sales, which are widespread in many countries.

Conclusions

The journey has just begun and initial experiences and reactions suggest that results will be very positive, as long as the programmes are consistent and sustainable over time. Involvement and support from National Health Authorities is necessary along with the provision of human and material resources needed to control antimicrobial use, monitor the operation of the programmes, conduct audits with feedback to prescribers and managers, training programmes and locally adapted guidelines. Antimicrobial Stewardship Teams might have the chance to select indicators and measure certain outcomes. Clinical microbiology laboratories should be strengthened and a well-functioning network to refer clinical samples to improve diagnosis must be developed.

The improvement in using these non-renewable therapeutic agents, the reduction in AMR, hospital length of stay, adverse effects and attributable death without doubts justify the initial investments in human and material resources.

References

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