



Summary brief

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High Use of Ampicillin/Cloxacillin and Watch Antibiotics in Health Care Facilities in Uganda

¹Reference: Namugambe, J.S.; Delamou, A.; Moses, F.; Ali, E.; Hermans, V.; Takarinda, K.; Thekkur, P.; Nanyonga, S.M.; Koroma, Z.; Mwoga, J.N.; Akello, H.; Imi, M.; Kitutu, F.E. National Antimicrobial Consumption: Analysis of Central Warehouses Supplies to In-Patient Care Health Facilities from 2017 to 2019 in Uganda. *Trop. Med. Infect. Dis.* 2021, 6, 83. <https://doi.org/10.3390/tropicalmed6020083>
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AWaRe Categories of Antimicrobials. Access group should always be available. Watch group should be used sparingly. Use Reserve only as a last resort. 60% of antimicrobials should be Access.

Key Messages

- High use of ampicillin-cloxacillin, a fixed drug combination was observed. There is no proven clinical benefit of the fixed combination over using the individual agents.
- Ceftriaxone, a Watch category antimicrobial accounted for over half of injectable antimicrobials. Efforts to promote its appropriate use should be started.
- This study demonstrates existing in-country capacity for continuous monitoring and reporting of AMC data to national, regional and global WHO/GLASS surveillance system.

What is the problem and why is it important?

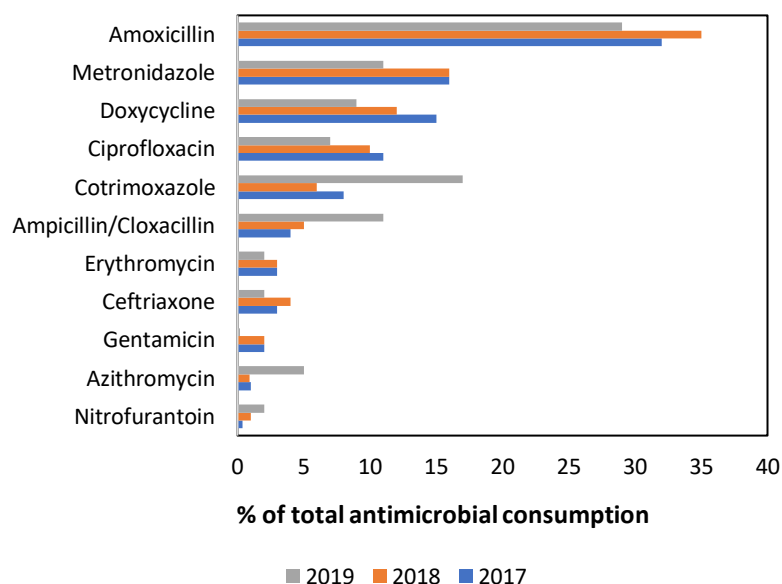
Overuse of antimicrobials in humans and animals is the leading cause of antimicrobial resistance (AMR), a serious public health problem worldwide. Studies in Uganda have shown high resistance to commonly used antibiotics such as cotrimoxazole, ceftriaxone, ciprofloxacin and amoxicillin-clavulanate. It is important to quantify antimicrobial exposure in human, animal, and environmental health, in order to provide information to improve antimicrobial use through stewardship activities. There is currently no standardised system for collated information on the quantities and nature of antimicrobials consumed at both national and sub-national levels in Uganda.

How did we measure it?

We analysed all antimicrobials supplied to health care facilities from National Referral Hospital to Health Centre Level IV, using the WHO methodology for antimicrobial consumption surveillance (version 2019). Quantities were converted to Defined Daily Doses and grouped by therapeutic and pharmacological class. Analysis was further done using the WHO Access, Watch and Reserve (AWaRe) categorization, where antimicrobials are classified into different groups to emphasize the importance of their appropriate use and risk of developing resistance.

What did we find?

Top ten antimicrobials used in 2017, 2018, 2019



- Ampicillin-Cloxacillin, a fixed-dose combination antimicrobial, represented 11% of total antimicrobials consumed in the three study years.
- Ceftriaxone, a Watch category antimicrobial, was the top consumed injectable antibiotic. Erythromycin, azithromycin and ciprofloxacin, also Watch category, represented a substantial proportion of antimicrobial consumption. Nitrofurantoin was a new entrant in the top ten used antimicrobials in 2018.
- 81% of antimicrobials distributed by NMS and 65% those by JMS were in the Access category.

Implications

Restrict the use of unnecessary fixed-dose antimicrobial combinations, specifically ampicillin and cloxacillin to prevent the spread of AMR.

- The use of ampicillin-cloxacillin fixed drug combination needs to be strongly discouraged, and National Drug Authority should restrict its importation and withdraw marketing authorisations for it.
- Interventions to ensure the appropriate use of highly-consumed antimicrobials such as ceftriaxone, ciprofloxacin, azithromycin (Watch antimicrobials) need to be instituted so as to avoid their overuse, and preserve their effectiveness.
- This study demonstrates existing in-country capacity for continuous monitoring and reporting of antimicrobial consumption data to national, regional and global WHO/GLASS surveillance system. Support to the authors will enable monitoring of annual antimicrobial consumption trends in health facilities, to evaluate the effectiveness of rational medicines use programs, and to create a national standardised AMC surveillance system.
- Uganda achieved the WHO recommendation of over 60% of antimicrobials being in the Access group and this should be maintained.