Antibiotic prescriptions have surpassed the WHO standards at a district hospital in Ghana; time to implement stewardship! 1

Key Messages

- Audits of antibiotic use are important for monitoring and quality improvement of prescribing. This is not done systematically in most hospitals.
- An assessment of antibiotic prescribing among outpatients of the University Hospital, Kwame Nkrumah University of Science and Technology (KNUST) found it to be at 36% rather than the recommended 27%.
- 43% to 51% of antibiotics prescribed in a month belonged to a category that WHO recommends to be used sparingly.
- Institutionalizing an antimicrobial stewardship program is key to embedding rational antibiotic use in the hospital.

What is the problem and why is it important?

- Inappropriate and excessive use of antibiotics is a major driver of antibiotic resistance which is a significant cause of mortality and morbidity. Resistance increases healthcare costs for both patients and the health system due to the longer duration of illness, additional tests and more expensive alternative treatment.
- To safeguard against inappropriate and excessive use of antibiotics, WHO recommends that antibiotic prescriptions should not exceed 27% of all prescriptions in health care settings.
- Thus, regular monitoring of antibiotic prescriptions is crucial to remain within the WHO threshold and prevent excess and inappropriate use of antibiotics. Data on outpatient prescribing is not routinely done in Ghana.
- This study aimed to assess antibiotic prescription patterns at a district hospital in Ghana.


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A patient encounter referred to a consultation on the same day in an outpatient department. A patient was considered to have received an antibiotic if any of the prescriptions retrieved against their unique identifier contained an antibiotic.

The WHO Watch category includes antibiotics with higher potential to develop resistance. They should be used sparingly as first and second choice treatment and for specific situations.

How did we measure it?

- We extracted prescriptions from electronic medical records (EMR) of 49,660 outpatients (110,280 patient encounters) at the University Hospital, KNUST, in 2021.
- We calculated the proportion of patient encounters in which an antibiotic was prescribed.
- For all antibiotic prescriptions, we assessed for completeness of documentation (name, dose, indication, frequency and duration of administration).

What did we find?

- Of patient encounters assessed, 36% resulted in an antibiotic prescription (ranging between 32% and 40% monthly).
- 43% – 51% of antibiotics prescribed in a month belonged to a category which WHO recommends should be used sparingly and only prescribed in specific situations.
- The EMR facilitated the audit of antibiotic prescribing.
- Deficiencies in the EMR database were identified that included:
  - indications not following any standard classification system
  - use of a mixture of generic and trade names of antibiotics

Implications and recommendations

- In the absence of regular audits and monitoring, antibiotic prescribing in the hospital exceeded recommended levels (36% vs 27% standard).
- The antimicrobial stewardship committee needs to extend audits and feedback of antibiotic prescribing to outpatient departments and in particular to:
  - Develop hospital-specific treatment guidelines and a formulary with Clinical and Therapeutics committee.
  - Undertake capacity building for prescribers on the rational use of antibiotics.
- There should be standardisation of the audits and feedback by integrating the International Classification of Diseases and generic names into the EMR by the hospital management.
- There needs to be increased advocacy for institutionalising regular prescription audits in hospitals by the Ghana AMR Platform Antimicrobial Stewardship arm and the Ministry of Health.