



## Inappropriate use of antibiotics in the management of COVID-19 patients in Sierra Leone

### Key Messages

- COVID-19 is a viral infection and should not be treated with antibiotics unless there is bacterial coinfection.
- In Sierra Leone, about half of all COVID-19 patients admitted to healthcare facilities received antibiotics.
- Such inappropriate use of antibiotics has the potential to amplify antibiotic resistance and increase mortality, morbidity, hospital stay, and health care costs.
- The following actions are recommended:
  - National case management pillar should **train** frontline healthcare workers on the national COVID-19 treatment guideline.
  - Directorate of blood and laboratory services should **equip** hospitals to conduct culture and sensitivity testing to support the diagnosis of bacterial infections and appropriate antibiotics use.
  - Hospital management should **strengthen** antimicrobial stewardship programmes to monitor antibiotic use.

### What is the problem and why is it important?

- Inappropriate use of antibiotics drives the development and spread of antibiotic resistance. This in turn drives increases in mortality, morbidity, hospital stay, and healthcare costs.
- COVID-19 is a viral infection and does not need to be treated with antibiotics unless there is bacterial coinfection.
- Globally, many studies have reported high levels of inappropriate use of antibiotics. But, there was no evidence from Sierra Leone.
- Hence, an operational research study was conducted to determine the prevalence of antibiotic use among suspected and confirmed COVID-19 patients admitted to healthcare facilities in Sierra Leone.

### How did we measure it?

- This was a nationwide cross-sectional study.

### <sup>1</sup>Reference:

Kamara IF, Kumar AMV, Maruta A, Fofanah BD, Njuguna CK, Shongwe S, Moses F, Tengbe SM, Kanu JS, Lakoh S, Mansaray AHD, Selvaraj K, Khogali M, Zachariah R. Antibiotic Use in Suspected and Confirmed COVID-19 Patients Admitted to Health Facilities in Sierra Leone in 2020-2021: Practice Does Not Follow Policy. *Int J Environ Res Public Health*. 2022 Mar 28;19(7):4005. doi: 10.3390/ijerph19074005. PMID: 35409687; PMCID: PMC8998021  
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Antimicrobial stewardship program are activities that are implemented to enhance rational prescribing of antimicrobial agents (including antibiotics).

The WHO AWaRe drug categorization classifies antibiotics into three groups, Access, Watch and Reserve. It is recommended that 60% of hospital prescriptions should be from the Access group

- The patient charts of all 1455 patients admitted to 35 healthcare facilities and community care centres in Sierra Leone from March 2020 to March 2021 were reviewed.
- A structured, pre-tested, and validated data collection proforma was used to collect data.
- Data collection was performed by healthcare workers trained to read patient clinical files.

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### What did we find?

- There were 700 confirmed COVID-19 patients and 48% of them received antibiotics. There were 755 suspected COVID-19 patients and 61% of them received antibiotics.
- The majority of patients received at least two antibiotics
- The predominant antibiotics used were azithromycin, ceftriaxone, Amoxicillin, metronidazole, and Amoxicillin-clavulanic acid.
- Most of these antibiotics fall under the 'WATCH' group of drugs according to the WHO AWaRe categorization. This is in contrast to the national and WHO guidelines which recommend using the 'ACCESS' group of antibiotics where warranted, and restricting the use of 'WATCH' and 'RESERVE' groups of antibiotics.

### Implications and Recommendations

- In conclusion, there were high levels of inappropriate use of antibiotics in COVID-19 patients in Sierra Leone. Possible reasons for this include (i) lack of an effective antibiotic stewardship programme, (ii) lack of knowledge about the WHO and national treatment guidelines and AWaRe classification, (iii) lack of access to rapid diagnostics leading to empirical antibiotic use, (iv) as a safety net and (v) lack of supervision, monitoring, and review.
- We recommend that
  - The national case management pillar should train frontline healthcare workers to follow the national COVID-19 case management guidelines.
  - The directorate of blood and laboratory services should equip hospitals to conduct culture and sensitivity testing to support the diagnosis of bacterial infections and appropriate use of antibiotics.
  - Hospital management should strengthen antimicrobial stewardship programmes to monitor the use of antibiotics.