

Original article

Are age-appropriate antibiotic formulations missing from the WHO list of essential medicines for children? A comparison study

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Abstract

Objective There is a global call for formulations, which are better suited for children of different age categories and in a variety of settings. One key public health area of interest is age-appropriate paediatric antibiotics. We aimed to identify clinically relevant paediatric formulations of antibiotics

listed on pertinent formularies that were not on the WHO Essential Medicines List for Children (EMLc).

Methods We compared four medicines lists versus the EMLc and contrasted paediatric antibiotic formulations in relation to administration routes, dosage forms and/or drug strengths. The additional formulations on comparator lists that differed from the EMLc formulations were evaluated for their added clinical values and costs.

Results The analysis was based on 26 EMLc antibiotics. Seven oral and two parenteral formulations were considered clinically relevant for paediatric use. Frequently quoted benefits of oral formulations included: filling the gap of unmet therapeutic needs in certain age/weight groups (phenoxymethylpenicillin and metronidazole oral liquids, and nitrofurantoin capsules), and simplified administration and supply advantages (amoxicillin dispersible tablets, clyndamycin capsules, cloxacillin tablets, and sulfamethoxazole+trimethoprim tablets). Lower doses of ampicillin and cefazolin powder for injection could simplify the dosing in newborns and infants, reduce the risk of medical errors, and decrease the waste of medicines, but may target only narrow age/weight groups.

Conclusions The identified additional formulations of paediatric antibiotics on comparator lists may offer clinical benefits for low-resource settings, including simplified administration and increased dosing accuracy. The complexity of both procuring and managing multiple strengths and formulations also needs to be considered.

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Statistics from Altmetric.com

No Altmetric data available for this article.

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Footnotes

- **Contributors** VI, HGL, LvD and AKM-T conceptualised the study, and formulated its study design and methods. VI collected the data, performed the comparison analysis and wrote the manuscript. AKM-T and HGL supervised the analysis, writing of the manuscript and ensured the quality of the study results. CR, EZ and MWP provided clinical insights and interpretation of the study variables and findings. All authors contributed to the revision of the manuscript, and have approved the submitted versions of the manuscript.
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