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Developing bespoke antimicrobials to combat antimicrobial resistance in low- and middle-income countries: A critical appraisal of clinical utility in the elderly

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The World Health Organization (WHO) has declared that antimicrobial resistance (AMR) is one of the top 10 global public health threats confronting humankind. In low- and middle-income countries (LMICs), which are home to about 84 % of the world's population, all-age death rates due to AMR are the highest, implying AMR is not only a global menace but a particularly grave concern for LMICs [1]. The burden of infections and AMR is high in the elderly population in particular, due to frail immunity, deteriorating organ functions, and chronic comorbidities. Poor treatment outcomes due to accelerated disease progression and slow recovery are the key challenges in the management of AMR in the elderly [2]. Of note, camouflaged physical signs in the elderly and the lack of adequate clinical experts pose diagnostic challenges in LMICs. In these countries, the AMR burden is highest due to the high frequency of critical infections, inadequate microbiological testing infrastructure, inappropriate use of antibiotics, inadequate access to second- and third-line antibiotics, poverty, poor sanitation and hygiene, data paucity, and weak regulations [3]. Although research and development of novel antimicrobial agents is one of the pivotal strategies to mitigate the AMR burden, the progress in the development of novel and effective antimicrobials is still inadequate [4].

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