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Covid -19, misinformation, and antimicrobial resistance

Stop misinformation about antibiotics for covid -19, or resistance will rise

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Well before covid-19, the world already faced an emergent threat of antimicrobial resistance, and many have sounded the alarm over further escalation during the pandemic.[1] A study from the US, for example, showed that 71% of covid-19 patients received antibiotics while only 4% had true bacterial coinfection.[2] This overuse of antibiotics may have contributed to the observed 10% increase in resistance against several classes of antibiotics (compared with 2019) at the same institution.

Spread of misinformation during epidemics has been documented before,[3] but covid-19 has brought with it a global deluge of misinformation. Politicisation of the pandemic in many countries led to politicians being a leading source of misinformation,[4] while initial underestimation of the pandemic by key public health stakeholders led to inconsistent messaging and widespread public confusion.[5] A survey of online news articles identified incorrect reports published in 25 languages in 87 countries, roughly a fifth of which were on cure and treatment.[6] In low and middle income countries, many of which already have a high burden of multidrug resistant organisms, misinformation includes overemphasis on the role of antimicrobials. This includes the use of azithromycin, which has been shown repeatedly to have no efficacy against covid-19.[7]

Lack of basic knowledge on infections and their treatment has resulted in poor understanding of this viral pandemic and its aetiology by general populations worldwide and, in some settings, medical professionals.[8] In Australia, 44% of respondents to a population survey incorrectly thought antibiotics could treat or prevent covid-19,[9] and university students in Jordan who believed in conspiracy theories around covid-19 also tended to incorrectly identify antibiotics as curative.[10]

Better communication

The cornerstone of covid-19 management remains supportive. As a "second wave" emerges and concerns rise, a strategy offering only symptom management in outpatient settings may cause further anxiety. This can often be mitigated by open and honest communication. Unfortunately, overburdened clinicians dealing with a surge in patient numbers have limited time to spend on individual encounters, particularly in low and middle income countries. Many have received inadequate training in patient communication, further impairing education of patients and the public.[11]

Misinformation affects clinicians and health policy makers as well as the public—partly fuelled by management controversies triggered by the early release of poorly reported and preliminary research findings. Early posting of preprints has allowed rapid dissemination of important research but also raised concerns over the public release of poorly conducted studies and the premature or inaccurate media reporting of unsubstantiated findings that often follows.[12] Both policy makers and frontline clinicians struggle to keep up with rapidly evolving evidence on the management of covid-19, particularly clinicians in low and middle income countries with limited access to timely, verified sources of information.

Strategies must be developed now to counter the detrimental effect of misinformation on the use of antimicrobials and prevent further deterioration in the global crisis in antimicrobial resistance. Since roughly half the adults in emerging economies[13] and almost all adults in higher income countries have access to a digital device, and more than half the world's population uses social media,[14] these strategies must include creative, regulated online media campaigns to combat misinformation.

Some organizations such as the World Health Organization and Nigeria Centre for Disease Control,[15 16] already use their digital platforms to correct antimicrobial misinformation by discussing the ineffectiveness of antimicrobials as a primary treatment for covid-19. Others, including the Africa Centres for Disease Control and Prevention and the US National Institutes of Health and Centers for Disease Control and Prevention,[17 -19] provide general information on public health measures, disease symptoms, associated myths, and stigma but do not discuss antimicrobial use specifically. They should be encouraged to correct this serious omission.

Concerted effort is also required to make sure medical providers have rapid, timely access to evidence updates on the management of all aspects of covid-19. Online teaching, webinars on management algorithms, systematic reviews, and living guidelines such as *The BMJ*'s Rapid Recommendations,[20] should be developed by regional and global agencies, and made available free to healthcare workers, allowing the rapid dissemination of trustworthy evidence.

Fragile healthcare systems in many parts of the world may not withstand the covid-19 pandemic if also faced with a substantial increase in antimicrobial resistance. We must tackle the twin pandemics of covid-19 and misinformation simultaneously.

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