Reviewer’s report

Title: Pandemics, public health emergencies and antimicrobial resistance - putting the threat in an epidemiologic and risk analysis context

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Reviewer: Boudewijn Catry

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This well written commentary explores risk assessment background for a pandemic in which antimicrobial resistance is a key factor. Strong point is the approach to include AMR from both viral and bacterial origin in this context. A formula is provided but not applied with reference material. Little information is given on the aging and modern medicine where immunodeficiency is quasi inherent to the system (cancer, transplants, …).

Introduction

(pages indicated refer to the pdf numbering)

p. 7 Remark- does a placebo effect when treating AMR infections might worsen the situation or decrease the number of casualties in case of antimicrobial resistance?

p. 8 spell out Staphylococcus aureus in italic

p. 12 : consider the incubation period as determining for a efficient pandemic.

p. 12 morbidity and mortality is only slightly touched in the descriptions of the AMR influenza cases, this might be considered.

p. 13: Streptococcus (2x) should be written with a capital (pneumonia not), and indeed italic.

It is mentioned that 25% of Streptococcus pneumonia are resistant for penicillin - please soften this percentage with more recent references, since it has been shown that the definition of resistance largely depends on the board of microbiologists involved and these criteria are highly variable.


p. 13: Remind the secondary bacterial infections listed largely are involved in respiratory tract infections and sequelae (e.g. bloodstream infection) and are examples of acquired AMR, whereas this is not the case for Clostridium difficile (intestinal disorder caused largely by intrinsic AMR)
p. 18: the added value of the formula provided, only in the section 'conclusions' is questionable. It might be considered to feed the formula with reference numbers or a simulation to make interpretation of this formula more intuitive. For this, a separate section prior to the conclusions might be added.

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