

Modelling the impact of media coverage on cholera transmission

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Abstract

Cholera is a highly infectious disease caused by the bacterium *Vibrio cholerae*. Its spread is a product of both social and environmental factors. Past and recent cholera outbreaks in Kenya have led to deaths and hospitalisation. In this study, we investigate the impact of media coverage on the spread of cholera using a mathematical model whose formulation is based on a system of ordinary differential equations. Positivity and boundedness of solutions are established to ensure that the model is well posed. The basic reproduction number is derived using the next generation matrix approach and used in analysing the local stability of the disease free equilibrium. Sensitivity analysis of the basic reproduction number with respect to the model parameters is carried out to assess the relative impact of each parameter on the spread of the disease. The results show that increasing the efficacy of media coverage is vital in controlling the spread of cholera.