

One Health studies that adopt a formal modelling approach: A scoping review

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Abstract

While the One Health perspective provides a useful approach by which to influence the complex interactions that pose a risk to the individual and collective health of humans, animals, and the environment, approaches to its operationalization can be enhanced. **Aim** This study examines models as contributors toward operationalization of One Health. It describes how modelling approaches have been applied to resolve the complexity of One Health problems. **Methods** A scoping literature review is based on the PRISMA-Scr approach. The literature is mapped from a One Health (area of application) as well as from a modelling (model type, modelling trends, unit of analysis, level of abstraction) perspective. **Results** 24 articles were identified that address a spectrum from strategic to tactical and operational considerations in One Health, with the bulk of the work slanted towards the former two aspects. Models focus on supporting high-level decision-makers on disease management strategies, investments, and resource allocation, and were developed with involvement of a broad set of stakeholders in One Health. Evidence could be found of the use of the major categories of simulation models, namely, systems dynamic models, agent-based models, and discrete-event models.