



Modelling the health impacts of disruptions to essential health services during COVID-19

Module 1: Understanding modelling approaches for sexual, reproductive, maternal, newborn, child and adolescent health, and nutrition



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Introduction to the guide

Coronavirus disease 2019 (COVID-19) has a wide range of documented effects. It directly causes death and disability for some people infected. However, disruption to essential health services, resources allocated to mitigation and therefore away from essential health service delivery, and the overall impact on the economy and society must also be considered within the response to COVID-19. Understanding the magnitude of all of these effects is an essential part of developing mitigation policies.

Several epidemiological models have been created to assess the potential impact of disruptions to essential health services caused by COVID-19 on morbidity and mortality from conditions other than COVID-19 illness. This guide presents models that have been used to assess these indirect impacts. The effects have been studied in various settings, using a variety of models.

The guide is intended for people who need to understand what the models say, their construction and their underlying assumptions, or need to use models and their outcomes for planning and programme development and to support policy decisions for a country or region.

Of course, an overview of models on COVID-19 is a moving target. Modellers create new models and they revise and improve established ones. Since the field is rapidly developing, it is important to note that modellers may have to overcome limitations or concerns that may be voiced here about approaches. Thus, the document may be revised to reflect these changes if such changes occur.

This document provides an overview and description of models from a technical point of view. The focus is on what the various models do, how they do what they do and the underlying assumptions on which the models are based. The document includes modules on modelling the disruptions caused by COVID-19 to the essential health services of specific health areas or conditions.

Each module will follow the same structure as closely as possible for consistency:

1. introduction to modelling for COVID-19 service disruptions
2. service disruptions in the context of the health area or condition of interest
3. models used in the disease of interest, their strengths and weaknesses, and their interpretation
4. outcomes and use of modelling studies to date
5. conclusion and recommendations for the use of models in the response to COVID-19.

This version of the guide (version 1) includes only the module on sexual, reproductive, maternal, newborn, child and adolescent health, and nutrition. The next version of the guide will contain more modules on other health areas or conditions.

The annexes to the guide comprise a discussion of data sources in general and an annex for each model presented, which gives details of the particular model for modellers and statisticians who wish to have this information.



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