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WHO Manual for estimating the economic burden of seasonal influenza

DEPARTMENT OF IMMUNIZATION, VACCINES AND BIOLOGICALS

Family, Womens's and Children's Health (FWC)

World Health Organization

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1. INTRODUCTION

1.1. Background

In 2010, the World Health Organization (WHO) commissioned the development of a manual for estimating the disease burden associated with seasonal influenza in a population *(1)*. A recent systematic review on the economic burden of influenza in low- and middle-income countries (LMICs) suggests that information is scarce and/or incomplete and that there is a lack of standardized approaches for cost evaluations in LMICs *(2)*. Given the current lack of economic burden estimates of seasonal influenza from these countries *(3)*, WHO commissioned the development of this *Manual for estimating the economic burden of seasonal influenza* to support the standardization of estimates of the economic burden of seasonal influenza across countries.

National governments require data on the economic burden of influenza disease in their countries to make informed and evidence-based decisions to allocate limited resources optimally and to prioritize interventions in the health sector. This manual is intended to support the collection of data on disease and economic burden in LMICs. It aims to enable country officials to perform studies assessing the economic burden of seasonal influenza disease to support policy-makers to decide on the introduction of a influenza vaccine, particularly if the limited resources available need to be allocated to ensure the optimal prioritization of several health interventions, and to support decision-making on complementary vaccination strategies and/or expanding vaccination target groups.

1.2. Objectives of the manual

This manual outlines key conceptual frameworks and best-practice approaches to estimating the economic burden of seasonal influenza disease. It also provides practical guidance on how to estimate the economic burden associated with seasonal influenza.

This manual has been developed primarily for estimating the economic burden in LMICs. The manual provides step-by-step approaches on how to estimate the economic burden associated with seasonal influenza, including direct medical costs, direct non-medical costs and indirect costs. It is a companion to other key WHO documents specific to this disease, namely: *A manual for estimating disease burden associated with seasonal influenza (1)* and *Guidance on the economic evaluation of influenza vaccination*. The *WHO guide to identifying the economic consequences of disease and injury (4)* further helps to form the methodological approach used to provide the specific advice on estimation of the economic burden of seasonal influenza. The manual is complemented by existing WHO guidance on introducing new vaccines into vaccination schedules *(5)*. The WHO publication *Principles and considerations for adding a vaccine to a national immunization programme* includes a list of these publications *(6)*.

1.3. Structure of the manual

The manual has four sections:

- **Section 1** summarizes the disease burden estimation as specified in *A manual for estimating disease burden associated with seasonal influenza (1).*
- **Section 2** describes the overall approach of economic burden estimation.
- **Section 3** provides seven steps in the overall process of economic burden estimation, including data collection.
- **Section 4** includes guidance on analysis and presentation of the economic burden.

2. DISEASE BURDEN ESTIMATION OF SEASONAL INFLUENZA

2.1. Classifying influenza by severity

To monitor influenza activity, WHO suggests sentinel surveillance of:

- influenza-like illness (ILI) to capture the mild spectrum of disease, and
- severe acute respiratory infection (SARI) to capture the severe cases of disease (Table 1).

Surveillance of both these diagnoses provide an approximate understanding of influenza incidence with the use of data from several influenza sentinel sites *(7)*. In practice, however, both approaches have some practical limitations. ILI sentinel surveillance sites in most cases may not have a known population denominator. The percentage of confirmed case among those tested ILI cases is used to calculate the total number of actual ILI cases. Cases of SARI require laboratory-confirmed influenza-testing by polymerase chain reaction (PCR). A detailed description of ILI and SARI cases can be found in *A manual for estimating disease burden associated with seasonal influenza (1).*

Table 1. WHO case definitions for influenza sentinel surveillance *(7)*

Case	Definition criteria
Influenza-like illness (ILI)	• An acute respiratory infection with measured fever ≥ 38°C • AND cough • With onset within the last 10 days
Severe acute respiratory infection (SARI)	• An acute respiratory infection with history of fever or measured fever ≥ 38 °C • AND cough • With onset within the last 10 days • AND requires hospitalization