Estimating the burden of foodborne diseases is an essential component of efforts to rank risks of foodborne diseases and establish food safety priorities. National burden of disease studies allow countries to allocate resources more efficiently to prevention, intervention and control measures. WHO encourages all countries, whatever their level of development, to begin working towards preparing their own estimates, to the extent that expertise and resources allow. The use of harmonized approaches across countries will allow experiences to be shared, estimates to be compared, and – ultimately – food safety policy to be improved.

This handbook provides detailed guidance on assessing the burden of diseases caused by microbiological agents commonly transmitted through foods. It is particularly intended for use at national level, and gives a complete picture of the requirements, enabling factors, challenges and opportunities involved, and the steps in the process. It also aims to foster harmonization of methodologies for estimating foodborne disease burden across countries.

The goal of a national burden of foodborne disease study is to rank and prioritize foodborne diseases based on their overall public health impact in the population. The objectives of such a study are to:
• estimate the burden of disease for selected foodborne hazards;
• develop a framework for routine updating of estimates and evaluation of trends; and
• provide a baseline against which food safety interventions can be evaluated.

Burden of disease can be expressed using various indicators, such as incidence, mortality, societal costs and summary measures of population health. In this document, the disability-adjusted life year (DALY) is proposed as the ultimate summary measure for quantifying the population health impact of foodborne diseases. The DALY measures the healthy life-years lost as a result of diseases or risk factors. It combines information on morbidity, mortality and disability caused by diseases. While some countries may not yet have the resources or capacity to estimate DALYs, it should be an aspirational goal, and any step towards it – such as estimating incidence or mortality – is valuable.

A burden of foodborne disease study has six main elements: planning; data preparation; calculations; attribution; interpretation; and dissemination. These elements and activities are likely to be dynamic and interactive, and should be adapted to the national context, taking into account the country’s capacity for public health surveillance and the availability of data.

While certain aspects of the work – data collection, calculations and generation of DALYs, for example – are often assigned to a specialized agency or group with specific skills, it is important to engage a broader group of actors in the overall process. The engagement of these national stakeholders is crucial, not only because they can provide valuable input, but also to generate interest and recognition of the usefulness of the estimates produced. Stakeholders include a range of organizations with a role and interest in food safety, such as governmental institutions, academia, representatives of food business operators and consumer organizations.

National burden of foodborne disease studies may generate a large number of estimates, and it is crucial to provide detailed results. Uncertainty in the estimates should also be described. To the extent possible, the results should be interpreted by experts in the fields of clinical medicine, public health, epidemiology, food science and food safety, and other relevant areas.

To ensure that the results of the study are used to their full potential, they should be presented and communicated to a range of audiences, including scientists, policymakers, food business operators, the media and the general public. The messages and format of the presentations should be tailored to the specific target group.

National burden of foodborne disease studies are critical to fill data gaps identified in global and regional efforts, focus efforts on the national context, and produce estimates based on local data that are as accurate as possible. They can also flag needs and data gaps in food safety systems, and promote cooperation and communication among stakeholders in food safety. In the longer term, information on burden of foodborne disease should be a fundamental component of a systematic approach to food safety, such as the risk management framework advocated by the Codex Alimentarius Commission. Such an approach can improve both public health and trade.