2.1: Introduction to types of intervention and their development

This book is about the evaluation of the effectiveness of health-related interventions. We use the term ‘intervention’ to apply to any activity undertaken with the objective of improving human health by preventing disease, by curing or reducing the severity or duration of an existing disease, or by restoring function lost through disease or injury. There are a wide variety of new interventions, and new strategies for the use of interventions, that are being developed against the major diseases common in LMICs. These include both public health and clinical care measures, and include drugs for acute and chronic conditions, vaccines, vector control, health education, behaviour change strategies, injury prevention, and better health planning and management methods that improve a spectrum of health-related activities. Research involving a wide range of disciplines is needed to develop, deploy, and assess these interventions, ranging from molecular biology and immunology to social sciences, epidemiology, and statistics. The focus of this book is on the evaluation of interventions through field trials. Field trials are required to assess how interventions, both old and new, may be best applied in populations and to determine their impact on improving the health of the population.

In this chapter, the characteristics of different kinds of intervention that may be used in disease control programmes are reviewed. How each type of intervention is implemented is outlined, and the implications of these implementation strategies for the design, conduct, and interpretation of field trials are discussed. The nature of an intervention will determine the way in which it can be evaluated in a field trial. Some interventions which are applied to individuals can be evaluated through the random allocation of individuals to the intervention or the ‘control’ arms. Other interventions are applied to groups of individuals, such as households or whole communities, and the group should therefore be the unit of randomization.