

Fractional dosing of vaccines: when less could mean more

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Fractional dosing of vaccines is considered a dose sparing solution for situations of vaccine shortages. Lower doses of vaccines, typically as 1/5th of the standard dose, are at present used for vaccines such as rabies, inactivated polio and yellow fever vaccines. However, the immunogenicity and safety of fractional doses compared to full dose need to be established before this strategy can be used. Since 2016, Epicentre has been working on assessing fractional doses of yellow fever vaccines. The aim of these studies is to provide the needed evidence to recommend fractional dosing of YF vaccines for outbreak response, when there are insufficient standard doses to protect the population at risk.

A non-inferiority trial assessing the non-inferiority of fractional doses of the four WHO-prequalified yellow fever vaccines in a general adult population, children and HIV+ adults has been recently completed in Uganda and Kenya. To complement these, a study looking at the non-inferiority of lower doses of the yellow fever vaccine manufactured by Institut Pasteur Dakar is currently ongoing. Several factors have been considered in the design of these studies to ensure that the results are sufficient for policy and practice change. These include the fraction to be studied, the study design and goal, evaluation of vaccine protection- and practical aspects related to the administration of the vaccine.

This presentation provides an overview of fractional dosing and discusses opportunities and barriers for other vaccines.