

# Drug Supply Modeling Software

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The design of multicentre clinical studies consists of several interconnected stages including patient recruitment prediction, choosing a randomization scheme and a statistical model for analyzing patient responses, and drug supply planning. The Research Statistics Unit (RSU) at GlaxoSmithKline (GSK) has developed a supply modeling tool to predict drug supply needed to cover patient's demand in a single study with a given risk of running out of stock for a patient. The tool allows for central and centre-stratified randomization of the patients, equal and different treatment proportions within the randomization block, single and multiple dispense types of studies, and other factors. All algorithms are based on closed-form analytic expressions so no Monte Carlo simulation is necessary. The primary tool is built as an R package. In order to support Clinical Trials Supply and Global Supplies Operations teams at GSK, the RSU created a user-friendly RExcel interface embedding the risk-based supply modeling tool into the Excel environment.