

Title: Strategic Decision-Making in Drug Production: A Data-Driven Approach

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Short summary of talk:

The production of a diverse array of drugs presents multifaceted challenges, encompassing decisions on product selection, global demand fulfillment, and strategic distribution across various sites. Critical considerations include determining the optimal balance between in-house production and outsourcing to external contractors, as well as strategically allocating production volumes among different sites. Key questions arise regarding production quantities, cost implications, site selection for new products, and the most effective shift models for each production line. In response to these challenges, we have developed a data-driven simulation toolkit designed to address these complexities comprehensively. By integrating various constraints and variables, including historical data to account for different sources of variance in production, this tool empowers decision-makers and planners with essential insights to enhance production capacity, maximize asset utilization across manufacturing lines, and, most importantly, guarantee reliable delivery of drugs to our patients. For all toolkit related projects, we have employed a new operating model for optimized collaboration between subject matter experts and statisticians. This talk will also share lessons learned and best practices resulting from this approach.

Bio:

Christian Schmid is a Senior Statistical Scientist in the Nonclinical Biostatistics group at Roche. In his position, he primarily provides statistical support to the process development and drug manufacturing functions. Christian is also a founding member and steering committee member of the EFSPi CMC working group. Prior to joining Roche, he gained experience in the nonclinical field as an intern at Janssen where he was mentored by Stan Altan. Christian earned his PhD in Statistics and Computational Methods at the Pennsylvania State University, where he mainly worked on estimation techniques for statistical network models with a focus on applications in political and social sciences.