How do we make better graphs? Effective visual communication for the quantitative scientist

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The goal of quantitative science is to enable informed decisions and actions through a data-driven understanding of complex scientific questions. It is the role of any quantitative scientist (pharmacometrician, statistician, econometrician, etc.) to support this goal through (1) elucidation of the scientific question of interest, (2) appropriate quantitative methods (experimental design, statistical models, etc.) and (3) effective communication of results. All of these aspects work in concert; one without the others is not sufficient. Scientific influence relies on effective communication however, we often focus on the former and neglect the latter, with sophisticated investigations remain without impact. Graphics are at the core of exploring and understanding data, but also communicating results and conclusions to supporting informed decision-making. Increasing our graphical expertise can significantly strengthen our impact as professional statisticians and quantitative scientists. In this talk, I will present a concerted effort to improve the way we (visually) communicate as statisticians at Novartis, sharing experiences of an internal initiative to help foster the use of good graphs in pharmaceutical statistics and beyond.