

## Statistical Graphics for Clinical Data Analysis

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Clinical trials are complex. There are many safety and efficacy endpoints and much information to be summarized and communicated to a variety of stakeholders.

Graphics promote better science and more effective communication. In clinical trials, graphics can be effectively used to both explore data and report on data. Examples of exploratory analysis include instream review, medical monitoring and safety assessment. Examples of graphics for reporting include presentations, publications, clinical study reports and regulatory submissions.

Exploratory and reporting graphics are quite different. Report graphics typically need to be self-contained and documented with source data and output file references. They stand as static summaries of an analysis and need to be reproducible. Exploratory graphics are typically interactive and not self-contained. They are best when they allow the user to explore points/regions of a graph through brushing and drill-down. This enables viewing of population trends with subsequent detailed exploration of interesting individual subjects.

This presentation shows a number of different graph types for exploratory analysis and reporting of clinical data. Report graphics are illustrated using S+<sup>®</sup> and Clinical Graphics<sup>™</sup>, both part of the TIBCO<sup>®</sup> Spotfire<sup>®</sup> product family. Exploratory graphics are illustrated using TIBCO Spotfire. These products enable end-users to create their own graph templates from an inbuilt palette of graph types, and to share these for re-use on different clinical trial data across a variety of functional areas.

The presentation includes some detail on the application of S-PLUS Trellis<sup>™</sup> graphics to the multivariate graphical analysis of clinical data. The presentation also includes a demonstration of a TIBCO Spotfire multivariate analysis of similar clinical trial data.