

Tables and Graphics I: Making Tables and Figures Say What They Are Supposed to Say

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One of keynote speaker Eric Schrier's rules—and perhaps the most important—for communicating with consumers is to “make it look good”. In an engaging session, David Nadziejka and Phil Fontanarosa demonstrated how authors and editors can apply this rule to the preparation of tables and figures.

Nadziejka identified 2 key requirements for worthwhile tables: They must make good use of space, and they must not be intimidating. Because space in journal publications is usually limited, authors and editors must first consider whether the information that they intend to convey is suitable for a table. In 2 examples cited, the information in tables that contained simple text in a 2-column format was conveyed better when converted to text. Similarly, the content of a table that consisted of large blocks of blank data cells was better represented in the form of a list of bulleted items.

Tables targeted for medical or scientific publications often can be intimidating to readers. A table shown by Nadziejka, for example, displayed summary information on about 75 compounds. Deletion of redundant columns of information, insertion of blank space after every 5 rows, and shading of selected rows were offered as solutions for improving the table.

What makes a table visually appealing? The common features include column relationships that are immediately apparent, rows that guide a reader's eyes easily across the page, stub entries that are easy to read, appropriate markings for emphasis, and a layout that makes it obvious to a reader where to look next. Tables that lack any of those features might lead to misinterpretation of useful information. In 1 example, underscoring that was used in a table to identify significant values would probably be interpreted as representing subtotaling of data.

Fontanarosa stated that good figures are visually interesting, make 1 point, are simple and straightforward, can stand alone (be read and understood independently of the text), impart important information (as opposed to window dressing), and are credible. For scientific or medical publications, figures should display data in which patterns, trends, proportions, or relations are important, but they should not be used only to show exact data points. In addition, they should draw attention to the data displayed, not to their own design or format. Fontanarosa displayed 3-dimensional figures that were appropriate for showing trends among 3 variables; 2 other examples that showed no marked trends and presented exact data illustrated ineffective uses of such figures.

Space requirements are an important consideration in the decision to use figures, given the constraints imposed by publishers. For example, depicting a stepped-care approach to pain management in a small flow diagram or table is preferable to using a large 3-dimensional representation, because the figure would require more space than either the diagram or the table.

Schematic diagrams, flow charts, decision trees, line charts, and maps have wide application in medical and scientific publications. Schematic diagrams can effectively

represent complex processes, such as a study design or the flow of patients from selection through follow-up. (Incidentally, in the session, “Ten Common Statistical Reporting Errors in the Biomedical Literature” [*CBE Views* 1996;19(4):82-3], Thomas Lang also recommended schematic diagrams to avoid the common error of failing to account for all study subjects.) Flow charts are ideal for showing logical progression visually, whereas decision trees are effective for depicting potential decisions and outcomes in a logical sequence. Line charts are ideal for comparing trends before and after an intervention or event or showing an association of events with a trend over time. Maps are useful for showing comparisons by region, distributions by location, or patterns of rate change by location, but they are ineffective if there is no identifiable trend or pattern. It is important to keep maps up to date and free of distortion.

The presenters fielded questions from the audience in the latter part of the session. One audience member questioned the value of applying shading in tables, stating that it leads readers to assume that some rows are being highlighted for a specific reason. Nadziejka agreed and suggested limiting the use of shading to large tables and avoiding darker shades. Fontanarosa was asked about the proliferation of 3-dimensional figures in scientific and medical publishing. He offered the opinion that portraying simple information in a complex format, such as a 3-dimensional figure, is problematic. Another audience member commented on the trend of many publishers to use color figures in publications. Although color graphics are visually compelling, Fontanarosa noted, a potential problem with them is the loss of information when they are photocopied in black and white. ●