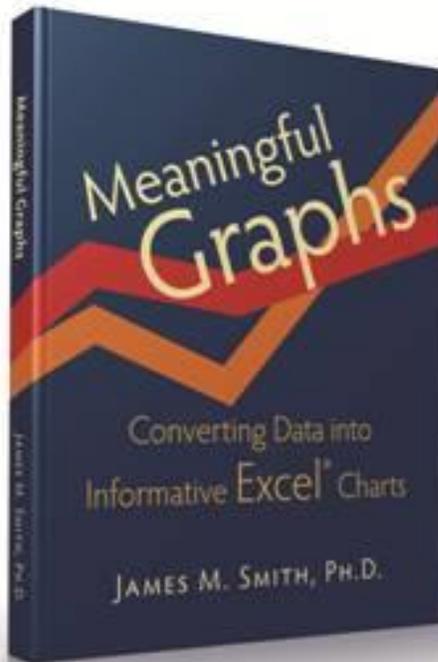# Meaningful Graphs:
Converting Data into Informative Excel® Charts
James M. Smith, Ph.D. (June 2014, 228 pages)

A concise and practical go-to guide
for creating meaningful graphs in Excel® for healthcare data

Meaningful Graphs helps you create charts in Excel ® that clearly and accurately tell the story in your data.

It incorporates (a) the graph design principles of the experts, (b) the software steps necessary to incorporate these principles into Excel ® charts, and (c) chart-related discussions of quality improvement (including Pareto charts), statistics (including run charts and correlations), and the use of graphs in PowerPoint ® presentations (including chart animation). Examples are taken from healthcare with over 120 graphs in full color, many with tables of data to facilitate practice. Principles of graph design and Excel ® techniques apply to all areas.

Reading this book you'll learn:

- how to select the correct chart type for your data and how to format it to tell your story more effectively
- the nature of "chartjunk" and why the design of some charts requires mental gymnastics to interpret
- why looks can be deceiving (3-D charts)
- the appropriate use of color in charts

- why truncating the value axis of several types of charts is a fatal flaw
- how to determine whether a statistically significant change has occurred merely by calculating the mean or median and plotting the data
- the chart type that one design expert refers to as a mortal sin
- why experts in chart design disparage the use of pie charts and what they recommend in their place
- which of the six less frequently used chart types (area, stock, surface, doughnut, bubble, and radar) may have some value in healthcare applications
- how letting the data talk in their own terms often leads to problem solutions

If you follow the advice in this book, the graphs you create for reports, presentations, posters, or publications will be more informative and more readily understood.

Praise for *Meaningful Graphs*

"Dr. Smith's book, *Meaningful Graphs*, is a terrific resource for clinical, quality, and other healthcare professionals who have responsibility for presenting data as a component of their professional activities....Now his expertise is available to all of us in this terrific reference guide, written in a conversational tone, for novice as well as more experienced Excel user. *Meaningful Graphs* is like having a wise colleague at your side helping you to create effective graphs." **Jonathan B. Perlin**, MD, PhD, MSHA, FACP, FACMI, former Under Secretary of Health, US Department of Veterans Affairs

"*Meaningful Graphs* is an important and valuable book for all who are leading a Lean or continuous improvement transformation in hospitals, or any industry...I highly recommend this book for its insight as well as its practical tips for using Excel, a tool we all have, to help you create meaningful graphs as part of your meaningful work." **Mark Graban**, Author of *Lean Hospitals* and co-author of *Healthcare Kaizen*

"There are so many good things in this book that it would be impractical to list them all. Suffice it to say that if you want to create charts and have Excel phobia or if you've got the data but you are failing to get your point across, this book is written for you." **Mike Davidge**, Director, NHS Elect, part of the National Health Service, London, England

"As a lifelong health educator, this book is one of the best educational tools I have ever encountered. It is an outstanding aide to people (especially health care professionals) interested in using Excel graphs in reports and presentations. The text and graphs are very clearly presented, the Tips and How To sections are extremely useful, and the myriad health care examples effectively complete the task of tying theory to practice." **Jules M. Ranz**, MD, Clinical Professor of Psychiatry, Director, Public Psychiatry Fellowship, NYS Psychiatric Institute/Columbia University Medical Center

"*Meaningful Graphs* offers what most books do not: it cuts clear to the chase on what you need to do to create Excel charts that tell your story. It also includes user-friendly discussions of quality improvement and statistics as they relate to charts, and touches on PowerPoint techniques including chart animation. A must read for anyone who wants to master Excel

charts, starting at the most basic level." **Linda Demke**, PhD, RN, Day 1 Mental Health-Founder; Manager of Nursing Research, Medical City, Dallas, Texas

"Finally!! A book that I can recommend to students so they can appreciate the science and art of *Meaningful Graphs*. Dr. Smith skillfully combines the principles of good graph design and the techniques of Excel and does so in a way that is brilliantly illustrated and easy to follow. I will ensure our bookstore has multiple copies on hand." **James Regan**, Ph.D., Director, Graduate Psychology Program, Marist College

"This text is an excellent overview and snapshot using real life clinical examples that guide students, faculty, and practitioners in how to highlight salient data points using graphics. It shows how to bring the meaningful essence of data to life." **James L. Harris**, PhD, APRN-BC, MBA, CNL, FAAN, Co-Editor of *Initiating and Sustaining the Clinical Nurse Leader Role: A Practical Guide* (2nd ed)

"Dr. Smith guides the reader to create knowledge from data, and to convey this knowledge in a clear concise manner." **Susan Mace Weeks**, DNP, RN, CNS, LMFT, FAAN, Associate Dean, Harris College of Nursing and Health Sciences, Director, Center for Evidence-Based Practice & Research: A Collaborating Center of the Joanna Briggs Institute

"Dr. Smith, who has spent over 35 years in healthcare research and quality, has done a masterful job in this book of presenting the art of good graph design in a format that can be easily understood and immediately applied." **Rose O. Sherman**, EdD, RN, FAAN, Professor and Director, Nursing Leadership Institute, Florida Atlantic University

"Dr. Smith has mastered the art of sharing healthcare data in ways that are simultaneously rigorous and accessible to a wide audience. In *Meaningful Graphs*, Dr. Smith shares what he has learned, and I highly recommend this book." **Lewis Opler**, MD, PhD, Professor of Clinical Psychiatry, Columbia University Medical Center

"Dr. Smith has done quite a job in creating this well-researched little gem on communication via graphs and charts….While he draws his illustrations from his long experience in health-care statistics, the caveats and recommendations are very easy to extrapolate into most other fields where quality graphical communication is important." **Michael A. M. Keehner**, Adjunct Professor, Finance and Economics, Bernstein Faculty Leader, Columbia Business School

"Anybody, in any organization, planning to include quantitative data in a report...should first read this book." **Mike Carberry**, Executive in Residence, Kogod School of Business, American University