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David Jones, **Pharmaceutical Statistics**

London: Pharmaceutical Press, 2002. 608 pages
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ISBN 0 85369 425 7

Reviewed by Professor Mike Roberts, at the Department of Medicine, Department of Practice and Policy, Princess Alexandra Hospital, The University of Queensland, Ipswich Road, Queensland, Australia

This book is a welcome addition to the Pharmacy library. Written by a pharmacy academic with a considerable number of years of experience in applying the art of statistics, as well as being an Editor for the *Journal of Pharmacy and Pharmacology*, the book is targeted at undergraduate and postgraduate pharmacy science students. The first part of the book outlines basic statistical principles including qualitative measurements, visualisation of data, probability theory and distributions, whereas the second part of the book provides details by which statistical hypotheses may be mathematically examined and validated.

An undoubted strength of the book is its clarity in presentation, achieved by to-the-point descriptions and good worked examples using various aspects of pharmacy as a basis and illustration. What I particularly liked about this book was the large number of examples of practical problems presented, especially when many of those presented are those which my own graduate students have come across in the past and remain as a likely stumbling block for any new graduate student. For instance, there are a number of texts on the proper methods to present data. This book, in Chapter 3, uses a number of published figures to illustrate how data may be optimally presented. Examples of the binomial distribution in Chapter 4 include incidence of side effects in an anti-hypertensive agent clinical trial, defects in tablets in pharmaceutical manufacturing, precipitation in an injection mixture of sulfamethoxazole and trimethoprim, correct assessment of dental adhesive strength, and possible urethral catheter design problems based on clinical outcomes. The book gives a good overview of statistical hypothesis testing

and confidence intervals in Chapters 5 and 6, respectively. As an illustration of parametric testing for two independent samples, Chapter 8 seeks to design a clinical trial for a new isotonic drink for athlete endurance based on a pilot study. The approach taken in the book is to summarise what assumptions are being made, what equations should be used, and how these equations are used and interpreted, as well as giving the outcome. The worked examples in Chapters 9 and 10 for comparing samples such as those for bioequivalence, blister packaging, manufacturing etc. are the clearest examples I have seen in any textbook dealing with parametric and non-parametric comparisons. Chapter 11, dealing with non-parametric analysis testing for multiple samples, deals with concepts such as chi-square, Kruskal–Wallis, Friedman–Nemenyi in an illustrative manner that I have not seen in any other statistics book. Chapter 12, in illustrating linear regression, considers, as one example, release from a dosage form, the underlying equation on which it is based, a worked example, discussion and explanation of why this may not have happened, and the best ways of interpreting and presenting the outcomes of the analysis. One could argue that this section may have been further strengthened by consideration of the Durbin–Watson statistic. However, in my experience, consideration of the distribution of residuals by looking at the data is usually the best way of assessing whether a linear regression is appropriate for a set of data and this is the approach taken in this book.

It could be argued that the value of the book may have been further increased by consideration of multiple linear (stepwise) regression, logistic regression, co-variance analysis, survival analysis, relative risk and odds ratio, as well as issues such as sampling, blinding and stratification, so essential to clinical trial design. However, the value of this book is in its direct relevance to its target audience of undergraduate and postgraduate pharmacy science students and its likely appeal to that audience by being straightforward, relevant, easily understood and written from a problem viewpoint. The book is highly recommended to any person interested in quantitative aspects of pharmacy but is likely to be especially useful to undergraduate pharmacy students and those taking a course in pharmaceutical statistics at the graduate level.

Robin Harman, Patient Care in Community Practice. A handbook of non-medicinal healthcare. Second edition.

London: Pharmaceutical Press, 2002. 283 pages paperback. Paperback £24.95
ISBN 0 85369 450 8

Reviewed by Dr Imogen Savage, Lecturer in Patient Safety at the Department of Practice and Policy, School of Pharmacy, Brunswick Square, London, UK

Pharmacists and pharmacologists tend to think of patient care in terms of drugs. This useful and unusual book takes a different perspective, providing a practical guide to non-drug aspects of therapy outside hospital.

Robin Harman, a pharmacist with a background in community practice, teaching and editorial work, wrote the first edition of this book in 1989. His aim was to bring information on a wide range of what he termed “non-medicinal products” – dressings, appliances (e.g. stoma bags) and administration devices (e.g. oxygen) – together in a single reference guide for those working in community practice. Primary healthcare workers may not have many patients who need these products so it can be hard to build up expertise. His book aimed to fill this information gap, covering stoma therapy, incontinence, trusses, compression hosiery, dietary and wound management products, and devices for delivering oxygen, inhaled drugs, total parenteral nutrition and dialysis treatment.

This second edition is an update produced with the aid of eight co-authors. The layout has been given a make-over, with more space, more headings and bullet points, and better, more modern illustrations. The detailed contents lists, which came at the start of each chapter, have been cut, and the book now has a cleaner more modern look.

However, the format remains reassuringly the same. Each chapter starts with some background on the conditions for which the products are used. The product range (and availability on the NHS) is then described, followed

by information on use and the types of problems that can occur. Most chapters end with a list of self-help organisations and/or suggestions for further reading.

The second edition contains one new chapter, on the growing use of home enteral nutrition. The author argues that malnutrition is an important public health problem in the UK, with up to 40% of adult hospital admissions considered malnourished and up to 16% of institutionalised elderly at risk of, or actually suffering from, malnutrition. This chapter considers the consequences and costs of malnutrition, and describes the indications for providing enteral feeding and the routes and methods of administration. There is a very useful discussion on drug administration and feed-drug interactions.

This is a practical book, intended for people who actually provide care, or train those who might do so in the future. If you want to know how to fit a truss, change an oxygen cylinder, or find an NHS-prescribable gluten-free pizza product then you will find the information in here. You will also find clear, specific information to help you answer queries from patients or relatives about stomas, incontinence management, special diets, asthma nebulisers and home dialysis.

This second edition now provides additional reading but references are not cited to back up the statements made about the benefits of particular therapies. Some readers may find this frustrating but it does highlight the lack of research-based evidence for this low profile area of patient care.

Apart from the wound management area, with new knowledge on the underlying processes, new techniques and new high technology products, readers familiar with the first edition may be struck by just how little things have changed.

Back in 1989, skin problems caused by hypersensitivity reactions to ostomy appliances, adhesives or cleaning agents were described as “notoriously difficult to eradicate and . . . responsible for a significant reduction in the quality of life”. Thirteen years on, the words in the second edition of this book are exactly the same. Food for thought for everyone, from research to practice.