Spreadsheets - numbers into nursing does go!

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Summary: A personal review of spreadsheets which may help nurses present data, covering Lotus 1, 2, 3; Excel, Lotus Improv, Quattro Pro and As-Easy-As.

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We often argue nursing is a humanistic science. Nursing relies on the interplay between nurse and client, and is therefore a thousand spiritual miles away from accountants and their hard figures. Nothing can really be further from the truth: nursing manages vast amounts of resource, generates large quantities of positivist data and is increasingly being asked to analyse and report this information to others: managers, researchers and accountants.

The spreadsheet was really the product that launched personal computing and freed information from the mainframe. Visicale on the stoneage Apple 11 computer fired the imagination of accountants and business people: Visicale enabled users to build up pages of figures and calculations. Change the figures and the results changed!

This now appears such a commonplace idea that we forget that this was a real innovation: something impossible with paper, pencil and a pocket calculator. Users would march into a computer shop and demand ‘I want a Visicale’, and computing moved from the data processing department into common use.

In the subsequent years, the basic premise of spreadsheets has changed little: enter numbers and text or formulae on a grid, and see what happens. They have just happened to get more sophisticated, offering more functions, better formatting and all the while enabling those of us who nurse rather than hold degrees in applied mathematics to get more out of them.

Spreadsheets are basically a matrix of cells, organised by lettered columns and numbered rows. You put figures and other data in the cells, and can total, count and otherwise manipulate them, putting the data into other cells; thus a column of numbers can have the total of that column put at the bottom.

Hot spreadsheet tips

Style, sadly, is probably more important than substance: the way you organise your spreadsheets on screen and on paper should probably be given more consideration.
than the costings on your skill mix. Like word processed documents, a common fault is to overload the sheet with different fonts, shading of cells and colours. Simplicity is the key: remove the cell lines from the printed out spreadsheet, this makes them easier to read and nicely formatted. Place the figures in the middle of the sheet: starting from, say, D4: thus ensuring that they have a reasonable border around them.

Put in as much explanatory text and headings as you can, not only will this make the page easier to read, but will greatly assist in subsequent amendments of your spreadsheet.

Avoid excess shading or colouring of cells, emboldening of figures (especially totals) and most of all avoid changing font or point size for totals or results doing this usually invokes nausea on the part of the reader. Ensure your data is presented logically, in a neat order. Scraggy data spread across the page is very difficult to maintain and update, as well as being a turn-off to read.

A comparative review

'Like most desktop applications today, spreadsheets fall into three principle categories: those that are purely character-based, those that are character-based with graphical capabilities and those that are fully graphical. Unlike many other application niches, many of the most popular spreadsheets appear on different platforms: hence Lotus 1-2-3 for DOS, Windows, OS/2 and Unix; Excel for Windows and Macintosh. I have had the fortune to experience at first hand most of the major competing spreadsheets over the past year, so here are both my objective and (highly) subjective comments All prices quoted exclude VAT, correct as of March 1994, courtesy of Technomatic 081-205 9558.

Lotus 1-2-3

Lotus Development Corporation (0800 123 222) available for DOS (ver. 3.4: £249), Windows (ver. 4: £237), OS/2 (£353) and Unix (£445)

Lotus 1-2-3 was the seminal IBM PC application, the spreadsheet that still dominates the desktops of the world. It comes in a variety of guises, from standard DOS character-based, through to native graphical versions for Windows, OS/2 and Unix (via X-Windows).

Underpinning all versions is this rather strange method on getting to the menu using the forward slash key (/). The menu then appears across the top. Each function can then be accessed by pressing a key for the first letter of the desired function. So, to save a worksheet one has to type in: /FSY for < Menu >, < File >, < Save >, < Yes >, 1 really want to do this. This is really effective when you know what you want, but has a genuinely steep learning curve: many users of 1-2-3 never really get to use the application to its full advantage, as they cannot undertake more complex activities due to the typical aversion to reading the manuals. However, getting to know a little 1-2-3 will enable you to travel widely in the spreadsheet world, as it really is the lingua franca. It does, however, even in its graphical incarnations (where buttons and ribbons can replace that obscure forward slash menu) appear a little dated. Lotus typically sat on their laurels for too long and failed to appreciate that simply loading an application with hundreds of functions cannot replace improvements in usability through better interfaces.
Excel

Microsoft Corporation (0734 270000) available on Windows (ver. 5: £225) Macintosh (£299).

The new pretender to the crown currently held by 1-2-3 is Excel, without a doubt the most usable, powerful and feature rich spreadsheet available. In my belief, Microsoft Windows was developed for this application: it features graphical manipulation of the data, with easy formatting and analysis. The entire product is geared to high quality output. The strength of any product should be like this, for getting the data analysed means nothing unless you can present it to somebody else in an attractive and informative manner. The miracle of DDE (dynamic data interchange) means that you can take your spreadsheet and incorporate the figures (or even better, a graph of that data) in your word processed document. Excel is accessible to all levels of user, from those who just want to add up expenses to those who are planning purchaser budgets. It is particularly effective for gathering data and then graphing it, using semi-automated processes (or macros) called rather quirkily 'Wizards'

Lotus Improv

Lotus Development Corporation (0800 123 222) available for Windows (ver. 2: £89).

Improv actually changes the way one thinks about a spreadsheet. Lotus 1-2-3, Excel et al all use a grid of rows and columns which are fixed. Cells are therefore referred to universally as A13, C25 etc. Improv allows you to define your own column and row names. This makes the data at the intersection much more meaningful in English as A13 becomes ‘Ward A Patient Numbers: January’. It is also fully three-dimensional, meaning that one could also record information for each year, so it becomes 1994: Ward A Patient Numbers: January and so on. One can move the data around with the mouse, so analysis by year for each ward can be instantly changed to analysis for each ward by year - it sounds insignificant but is a considerable logical leap in the arrangement of a spreadsheet. Improv should incorporate the best of all worlds: flexibility, depth and the power of a graphical spreadsheet. However, it remains a product still in its infancy, and is a little shallow in functionality. Improv lacks the semi-automated features of Excel, and is consequently more use as a tool for skilled spreadsheet users rather than the novices amongst us.

Borland Quattro Pro

Borland International (0734 320022) available for DOS (ver. 5: £43), Windows (ver. 5: £43).

Borland has had to make some rather embarrassing changes recently, as a result of having been successfully sued by Lotus for lifting the forward slash menu system from 1-2-3. This was especially significant for those who wanted 1-2-3 functionality but without the premium price associated with the market leader. Borland have removed the offending 'look and feel' attributes of Quattro Pro, and reduced its price even further. It remains a highly efficient spreadsheet, bursting with functionality and a rather effective macro language. The Windows edition is a really effective, almost intuitive spreadsheet, having been conceived as a proper Windows product rather than taking existing code for DOS and running it through the graphical interface.
As-Easy-As

Tri -Us Software (shareware, from any shareware dealer) available for DOS (registration approx £45).

There are no prizes for guessing that As-Easy-As is a shareware clone of a basic Lotus 1-2-3’ (As Easy As 1-2-3 geddit?). Basic is what it is, but it is obtainable for a few pounds and registration (which you must do if you continue to use it, of course) is a pittance compared to the arm and a leg for the original. I learnt my spreadsheeting skills on As-Easy-As, and I found they transferred easily to more 'mature' products. It is a fully featured character-based spreadsheet and can be used to create effective, in-depth sheets. The problems are those familiar to frequent shareware users: poor manuals (even after registration), long distance support (from the USA) and a somewhat steep learning curve.

Summary and conclusions

This article has not discussed how you can apply spreadsheets to your practice. If you generate any form of data, particularly if some of it includes numerical information, then analysis on a spreadsheet is extremely effective. No user who needs to present information for management or research purposes can afford to ignore the possibilities that a spreadsheet can offer.

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