development of services, training and research in the psychiatry of old age. Public psychiatry in Australia is understaffed both at trainee and consultant level due both to a planned decline in the number of undifferentiated medical graduates and the continued drift of qualified psychiatrists from salaried positions to so-called private practice, largely paid for by government funded insurance rebates. A considerable proportion of the income of the average psychiatrist in private practice is derived from open-ended dynamic psychotherapy with relatively well patients and the extraordinary tolerance of the government in failing to limit the number of such sessions which will be rebated (Andrews, 1991) reinforces the continued movement of psychiatrists out of full-time salaried public practice, to the likely detriment of patients with dementia and functional psychoses among whom the elderly are prominent.

For the British psychiatrist or trainee there are a number of ways to work in Australia. Formal registrar exchanges between London and Sydney are established and there are plans to extend these swaps to include Melbourne. At an informal level trainees willing to expend a few pounds in postage will find a six month job opening at a reputable hospital without much difficulty. For those with the MRCPsych there is a welcome both for those seeking a year or two at senior registrar or junior consultant level and for those who desire to make a permanent home here. Air fares to Australia have never been lower in real terms than they are at present so there is every opportunity for those contemplating a job here to come and inspect us on a brief advance visit.

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Computers in psychiatry

An introductory course

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4. Spreadsheets

Imagine an "intelligent" sheet of paper, on which you could record data in an organised fashion, and format its appearance for publishing purposes, but which could also do it's own calculations, (with the answer appearing automatically), *and* draw graphs of the results. This is essentially what a spreadsheet does.

A spreadsheet is ruled up into a grid of rows (numbered 1, 2, 3 etc) and columns (labelled A, B, C etc). The place where a column and a row intersect is called a cell and is named after the column and row (A1, B2, C3 etc).

	A	B	C	D	E
1		Column			
2		Column			
3	Row	Cell B3	Row	Row	Row
4		Column			
5		Column			

Typically, a modern spreadsheet will encompass several hundred columns and around ten thousand rows. This is much too large to fit on one screen and

so at any one time you only see a part of the worksheet, with the screen acting as a "window" which can be moved around the worksheet to view different areas of it. There are shortcuts to allow you to move from one part of a large worksheet to another quickly, and it is also possible to display more than one different part of the worksheet on the screen at the same time.

Data, which can be text, a number, a date or a formula, can be entered into a cell simply by moving the cursor to that cell and typing.

Formulae. Enter a simple sum into a cell, (like 45.56 divided by 23.45) and the cell will display the answer. An important feature is that the formulae you enter into cells can act on the numbers in other cells and display the answers. Hence if you have a column of data, you can place a formula in a cell which acts on that column of data and returns the mean. What's more, having placed the formula and defined which column of cells it acts on, if you change the values in the column the mean will be re-calculated and the new mean displayed. This is invaluable when amending incorrect data, or if you have data which change. You can also alter data to perform "what if" experiments, working out the effects of any possible changes.

Copying. Suppose you have two columns of data, A and B, and you want to multiply the two columns together a row at a time to create a new column of data, C. You do not have to enter a new formula in each cell in column C. Instead, you enter the following formula in cell C1 "C1 = A1*B1". The answer will be displayed in C1. You then give the command for copying the formula to all the cells in column C, and the spreadsheet goes down column C entering new formulae as it goes, each altered slightly to act on the cells adjacent to it, e.g. C2 = A2*B2, C3 = A3*B3, C4 = A4*B4 and so on.

Formatting. There are many ways of formatting a spreadsheet. One obvious necessity is to be able to alter the width of the columns or rows in order to accommodate the data you wish to enter. The cells can actually hold any amount of data, and altering the width of rows or columns simply changes the amount they can *display*.

You can also format the *content* of cells by telling the cell(s) what type of data they will contain: text, numbers, dates etc. Usually the spreadsheet guesses what type of data you are entering. It can tell, for example, that "elephant" is a word and that "234000" is a number. It may, however, mistake the date 12/4/67 for a formula (twelve divided by four divided by sixty-seven) and display the answer (0.045) instead of the date you expected. To avoid this, you first specify the format as "dates".

Finally, you can format the appearance of the worksheet by adding borders, changing the font of text and numbers, adding labels, graphs or pictures which emphasise your data, and printing out the result.

Graphs. Having stored all your research results on your spreadsheet, you may wish to turn some of it into a graph or chart to make it more meaningful. People soon got sick of exporting their data to graphical packages to draw graphs and so spreadsheets started appearing with this facility built-in. Nowadays, your spreadsheet will chart your data in any form from a simple bar chart to a 3D exploding pie chart! All you have to do is indicate the data you wish to have charted and the type of chart you want and the spreadsheet does the rest. The result can be printed, or even cut and pasted into a document.

Macros. A macro is simply a "recording" of a sequence of steps which you use commonly to perform a task. The task is therefore automated and can be invoked by pressing a "hot-key" to save you typing it all in each time. Macros are not exclusive to spreadsheets and are used, for example, in word processing to automate the entry of often-used text (like "Yours sincerely") or formatting. They are particularly useful in spreadsheets, however, enabling you to develop your own little "programs" to make your life easier.

3D spreadsheets. A 3D spreadsheet can have more than one page in a single worksheet i.e. it is like a stack of worksheets where a cell is defined by its depth as well as its row and column. You might want to use this if, for example, you had to collect serial ratings on a group of patients, rather than simply entering successive sets of results further down the same page.

Database functions. It may have occurred to you that if you use your spreadsheet to store your data in an organised fashion, it begins to resemble a kind of database, with the columns representing the fields and the rows representing individual records. It may not surprise you to learn, therefore, that many spreadsheets have several database functions built in, and can sort, search for and extract data according to preset criteria.

Import/export. Spreadsheets can use their resemblance to databases to export data in database format into a database package, using the column headings as fieldnames and each row as a separate record. Similarly, they can import data from a database, taking each fieldname and using it as a column heading. Some spreadsheets can intelligently import columns of data from a word processor, using tabs or commas to separate the columns.