

Macros: make your computer do the work!

How to free up your time by getting your computer to carry out repetitive tasks for you.



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When you find yourself typing the same thing over and over again, stop and ask yourself whether your computer could do it for you. Computers are excellent for performing repetitive tasks, so why waste time and energy doing them yourself? Using macros to perform these jobs will speed up your data entry and, by saving time, will enhance the time available for you to interact with the patient during the consultation.

A macro is a series of keystrokes or mouse clicks which are recorded, then automatically played back when required so that, for example, during a consultation for a simple urinary infection, one simple keystroke could add a Read code entry, some free text, and generate a prescription, just by hitting, ALT-F7 (i.e. holding down ALT and pressing F7)—assuming of course that you've previously set up the macro editor to carry out these precise tasks when ALT-F7 is pressed.

Microsoft Windows itself has a simple macro recorder, but it requires a much more sophisticated macro program to obtain the greatest benefit from the macro approach to data entry. An example is Macro Express 2000, a refined, stable and flexible macro editor that also gives excellent value for money¹. A demonstration version of this program is available on the web at <http://www.macros.com>

Examples

Here are some examples of macros for System 6000² which can be performed with one keystroke:

- Discontinue a medication item.
- Initiate a physiotherapy referral including the printing of the request form!
- Provide a picking list of referral codes with a popup menu.
- Provide a picking list of practice-specific or difficult-to-find Read codes.
- Provide a picking list of different reminders to be automatically entered for, say, a year ahead.
- Enter a new current problem, associated notes, free text and prescription if required for common GP consulta-

tions such as backache, URTI, cystitis or otitis media.

The possibilities are limited only by your needs, the use of your computer system and your imagination.

Why limit yourself to macros for the clinical system? Networked practices could have macros for winpopup messages or to send internal e-mails to administrative or reception staff. You could switch on the screensaver; use timed macros; or set up Short Keys: for example, in our surgery, typing '##wcs' (short for 'Well Close Square') automatically enters our practice name, address and telephone number in any program.

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The macro approach will simplify data input, enhance the use of your system, reduce the number of keystrokes and mouse movements you have to carry out, and increase your satisfaction over using the computer as an accessory to clinical care.

Here I'm going to give examples of using Macro Express with System 6000, although the same principles can be applied to any Windows-based surgery system—indeed, to any Windows-based program. The underlying principles also apply to the use of other macro editors.

Getting started

- Download Macro Express from the website mentioned above. (Download it as an .exe file. There is little point in downloading it as a zip file as the time saving is minimal.)
- Close down all other running programs.
- Go to the file you've downloaded—*macex.exe*. (Exactly where it is located will depend upon what e-mail software you have.)
- Having used Windows Explorer to find *macex.exe*, double-click on it to start the extraction process.
- Then follow the instructions, placing the files where you want them.
- Go to *Start/Programs/Macro Express* to run it (if that's where you told the computer to place the files).
- Macro Express can also be placed in the StartUp folder of Windows so that it automatically loads when you switch on your computer.

- Configure the settings on the 'options' menu so that the program sits in the background and can be seen in the system tray³ as a red M. (Fig. 1) Clicking on this will load the macro editor which allows you to configure your macros.



Fig. 1 Macro Express in the system tray

So now Macro Express has loaded. You can see what macros are already available (including some demonstrations) by right-clicking on the M icon in the system tray, selecting 'Open editor' and clicking 'Next' until you come to the final Editor screen. Now click on the 'Macros' tab to see what's there. Have a play with the listed keyboard short-cuts to see what the existing macros can do and to get a feel for the potential of macros generally.

Organising your own macros

Now you can begin to think about adding your own macros.

Note:-

- At any one time you can have a **large number of different macros available, each triggered by a different combination of keypresses** (ALT-F1, ALT-SHIFT-F1, CTRL-ALT-F1 etc).
- But **macros aren't limited to the function keys**. CTRL-SHIFT-M is just as valid a keystroke ('hot key') to trigger a macro. A hot key can be any combination of ALT, CTRL, SHIFT and WIN⁴ plus a character key, though you should use combinations of CTRL and alphabetical keys with great care, as many of these combinations already have functions within Windows and Word. (For example, CTRL-C and CTRL-V are the Windows and Word key combinations for Copy and Paste)
- **You can also trigger macros by the use of 'Short keys'**. These are key sequences which are captured and expanded—such as ##wcs which in

¹ *Macro Magic* is an alternative program but is rather more complex to set up. Find it at <http://www.iolo.com>

² You can use Macro Express with Premiere, Micro-Doc and System 5 as long as you use a Windows workstation (it works successfully with Termlite, and the soon-to-be released ANTHEM—see News, Page 23).

³ The system tray is the small box at the right hand end of the taskbar: it has the time in it and may contain other things as well.

⁴ The Windows key which is only available on some keyboards, placed between CTRL and ALT on the left

our surgery expands¹ to give our full address. If you're using Short Keys, make sure that the key sequence that automatically triggers the macro isn't likely to occur in unwanted situations—e.g. although you might at first decide to use 'add' as a short key to trigger the insertion of your address, typing in 'addition' or 'addendum' will then have unfortunate consequences!

To get round this problem, go to the Options/Shortkeys menu of Macro Express and activate the 'Use prefix keys' button, then in the box below set your prefix keys to something such as ##. This then means that a ShortKeys macro will only function if ## is typed first. You could then use ##add to trigger your address.

- If required, a macro can be set to operate only when a specific window or program is active, which allows a keystroke such as ALT-F1 to perform different macros in different programs. This allows almost limitless keystroke combinations, tailored to the differing needs of the user of each program.
- In addition to the huge range of key combinations and Short Keys, you can save and load completely different files of macros for different sets of circumstances. For example, you might have one macro file for use during surgery consultations; a completely different one for your diabetic clinic, and a third for use during e-mail sessions. (You can also set up a macro to allow you to swap between these files with minimum fuss.)

Remembering what does what

All this generates a problem of its own: how to remember all the different keystrokes!

Torex have a 'Toblerone' for System 6000—a printed cardboard prism that sits above the function keys on the keyboard. This *aide-memoire* labels the function keys, showing the action performed when you press the key, for example LOCK for F2. We have produced our own version of this device that includes prompts for ALT, CTRL and CTRL-ALT function key actions. At a glance this gives instant labelling of over thirty function-key macros.



Fig.2 A floating menu bar

Macro Express provides some neat solutions to the problem of knowing which macro does what.

- It will allow the configuration of a floating menu bar (Fig.2), which sits on the desktop on top of all windows: it is therefore always visible. We use this to change the session encounter with one click—our icon buttons perform Administration, 'Seen in surgery', Phone, Visit and Casualty encounter macros.
- Macro Express can produce popup

menus. These are user-configurable lists of macros that can be grouped together. These popup menus can also be displayed and accessed via a mouse click in the system tray: the **C**, **M**, **R** and **S** icons in the system tray picture (Fig.1) refer respectively to popup menus for Read Codes, Medication, Reminders and SOPHIES. The popup menu screenshot (Fig.3) shows our SOPHIE menu, triggered by clicking on the 'S' in the system tray (don't forget that this popup menu is also a macro, so it can also be accessed by a specific keystroke).

Choose A Macro		
	Name	Scope
0	Diabetic annual review Sophie	CLINIC.EXE
1	Diabetic review (doctor) Sophie	CLINIC.EXE
2	Hypertension Sophie	CLINIC.EXE
3	Raised BP Sophie	CLINIC.EXE
4	IHD Sophie	CLINIC.EXE
5	AF Sophie	CLINIC.EXE
6	Pregnancy care Sophie	CLINIC.EXE
7	Contraception Sophie	CLINIC.EXE
8	BMI Sophie	CLINIC.EXE
9	HRT Sophie	CLINIC.EXE
A	Urine testing Sophie	CLINIC.EXE
B	UTI Sophie	CLINIC.EXE
C	Asthma review Sophie	CLINIC.EXE
D	Exacerbation asthma/COPD Soph	CLINIC.EXE

Buttons: Cancel, Double Click or Press Number or Letter

Fig.3 A popup menu

Having called up this window, a double click on, say, 'Contraception SOPHIE', or alternatively pressing '7' on the keyboard, will automatically load and start our custom contraception SOPHIE for that patient.

Setting up your own macros

Setting up macros in the configuration editor is not difficult. Before you start, visit the Options/Settings of Macro Express and activate 'Show in system tray' and 'Make "Modify Directly" the default editor'. These settings will make Macro Express easier to use.

Importing macros

Once you have had a look at how Macro Express works, it might be worthwhile downloading the *macro.mex* file from the Well Close Square website and importing the file into Macro Express using the File/Open menu. You can then see on your own computer how the macros work in relation to System 6000.

Similarly, once you've built your own macro set, you can export it² as an *xyz.mex* file (fill in your own filename) to the central server, then import it from there into other workstations: now everyone in the practice can have access to the same macro set.

Build your own

To generate your first macro from Macro Express, open the Macro Express editor, hit the 'Add Macro' button, then type the hot key you wish to use. Be wary—some key combinations also perform Windows actions (eg.CTRL-F6), so avoid these combinations.

There are two directions to take now: 'Scripting editor' or 'Enter directly'. Choose the latter, now—you may wish

to explore the scripting editor yourself later.

Let's build a specific macro—for example, the procedure used in System 6000 to make a current problem dormant. Normally this requires several mouse clicks; it can also be performed (though more laboriously) by the following keystrokes:

```
F7 <TAB> <TAB> <TAB> <TAB> -
<TAB> <TAB> <TAB> <SHIFT TAB>
<ENTER>
```

Try it in System 6000. (Don't forget the minus sign in there!) Now enter this sequence in the 'Modify directly editor'.

Having entered the macro itself, we have to say how and where it can be called.

Click the *Properties* tab in the Editor. Here you assign a specific keypress to start the macro—let's make it CTRL-F12.

You can also make the macro available to run only in a specific program. Click the *Program* button, then *Select*. A new window appears. If System 6000 is running on your computer, the program *clinic.exe* will be visible—select this. If not, enter *clinic.exe* in the top box. Save your macro.

Now try it out! With System 6000 and Macro Express running, highlight a current problem, hold down CTRL and dab F12. The current problem automatically becomes dormant!

Capturing keypresses and mouse clicks

It is also possible to 'capture' your macro directly by 'recording' the keystrokes using Macro Express: this can sometimes be the easiest way for the beginner to start learning how to use macros.

As well as keystrokes it is also possible to capture mouse movements and clicks, but beware! If you use it at a different screen resolution (perhaps on a colleague's workstation) then the macro won't work properly because the position of the mouse will be different for different screen resolutions. Equally, if you work with a window that is less than full-screen, and move it, then a macro made up of mouse clicks may not work. It is usually better to stick with keystrokes to avoid these problems.

To make Macro Express record keypresses and mouse clicks, set up System 6000 at the place where you would normally want to start your new macro. Now go to the Editor, press the 'Quick Wizards' tab, then the large button labelled 'Capture a Macro'. You will be asked a few self-evident questions: the most important answer is to minimise Macro Express before recording the macro, so as to make sure that it doesn't get in the way.

Now you will find that you are put back in System 6000 at just the place to start recording the macro. Carefully press the correct keys, or use the mouse to carry out the required actions, remembering to stop the

¹ Very much like the Auto Text function in Word: see the article 'Flying fingers' on Page 4.

² Use Macros/Export to do this—as part of this process you will select which of your macros you wish to export.

recording when you have come to the end of your planned macro.

And that's all there is to it! If you make a mistake, you can use the Macro Editor afterwards to edit your work.

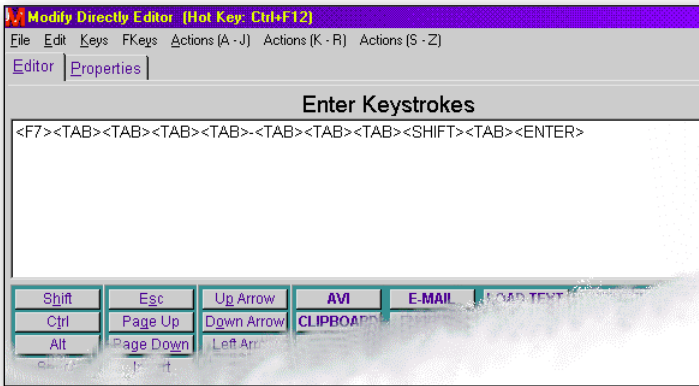


Fig.4 The 'Modify Directly Editor'

Editing existing macros

Whatever method you used to create your macro, you can edit it using the 'Modify Directly Editor'. This can be very useful if you've made a simple mistake during the recording of a directly captured macro; it's also helpful when you want to change some text within the macro. For example, you may have a macro to enter flu jabs, but you need to change the lot number. There's no need to go to the trouble of recording the whole macro again (and risk making a mistake): simply use the Editor to change the Lot number and away you go!

Setting up floating menu bars and popup menus

To devise a popup menu or floating menu, click the *Add Macro* icon, then the popup menu or floating menu button. This produces a new window that

looks vaguely familiar! It works like the issue medication box in System 6000, so clicking on a macro in the top box will select it and drop it down to the second box. The order of the macros in the bottom box can be altered by moving an individual macro up or down the list. The Properties tab will allow you to choose to view the final menu either as icons or as text descriptors.

Combining macros together, like programs

More sophisticated users can use the simple programming language in Macro Express to define more complex macros which will perform calculations, *If... Then... Then...* macros, combine macros together, run programs in certain situations or even devise SOPHIE-like interactive macros. The limit is only your imagination.

Organising your macros

- **Plan groups of similar macros so that the initiating keystrokes are similar:** e.g. Read codes, medication, SOPHIEs or medical software events.
- **Use coloured icons** in the editor to differentiate between these groups so that adding further macros later will be intuitive and logical.
- **Name your macros logically and descriptively, and assign them to categories** which make groups of macros easy to identify.
- Macros can be recorded automatically, but it may be easier for the beginner to work out the keystrokes

required, then enter them directly into the editor.

- Macros can be workstation specific or networked around the whole practice. It may be useful to have different sets of macros for doctors, receptionists, nurses and administrative staff.
- Having practice-specific macros on each type of workstation means that a user may move between workstations and initiate the same macro with the same keystrokes.
- A compromise is to have a basic set of practice macros on each workstation, leaving a specific group of keys available for individuals to program as they wish.

You can explore in detail how Macro Express can be used in the surgery, together with downloads of a macro file ready configured for using System 6000 with Macro Express, and a keyboard 'Toblerone' template, in the *Doctors/System 6000* area of the Well Close Square website at <http://www.wellclosesquare.co.uk> When using our macros make sure you read the instructions on the web site, so that you know where you have to be in System 6000 when triggering each macro in order to gain its desired effect.

PS: Macro Express was used several times while writing this article using Microsoft Word: can you spot where?

System 6000 users can visit the Well Close Square website at <http://www.wellclosesquare.co.uk> There's information for Premiere users at <http://www.juston.com/> together with a macro file with some Premiere-specific macros, as a subdirectory of the Programming Directory.

Micro-Doc—speeding up

When doing work on a particular subject, e.g. Immunisations or Maternity, speed up the process by setting your user options to default to the appropriate screen. Open 'Micro-Doc Utilities', select 'Other Parameters', select Options—User. Press 'W' for 'Start Window' until the screen you want is identified there. Now press 'Alt-U' to update your choice. Return to Micro-Doc, go into the patient record in the normal way and it will open with the screen of your choice.

The three greatest laws of computing

The three greatest laws of computing are:-
 1. Take backups
 2. Take backups
 3. Take backups.
 ...and, when all else fails, read the instructions.

System 5—To give a private drug to an NHS patient (v.5.7.1 and above only)

Add the drug in the normal way, but at the 'Issue medication' screen, choose **F5 OPTIONS, F3 PRIVATE**, then tap the line number of the drug twice (to unmark and mark it), then finally **F6 PRINT NOW** and the drug will be printed as a private drug. Note that the drug will remain private, and will need to be re-added if you decide to make it NHS again.

Premiere—Prescribing using the right mouse button

When in the repeat prescription page, if you have your mouse in the medication area and then right-click, you are offered options to prescribe repeat or acute prescriptions.

Premiere—Handshake

To link acute and repeat prescriptions on one FP10, prescribe the acute medication, then before ending Observation click on Repeats on the top menu bar and tick the repeats you want to issue. Now click on the hand which has appeared in the right hand side of the wide bar above the page tabs. This will take you back to the Observation screen. When you click on OK you are offered the print box. The acute and repeat prescriptions will now be printed together.

Micro-Doc—speedy movements

When entering new or updated data into a patient screen remember that from any point on the screen you can get to the end more quickly, ready to confirm updating of the data, by keying Ctrl-PageDown.