

Current Products and Practice

An Orthodontic Patient Administration System (OPAS[®]) for Complete Departmental Management

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Abstract. *There is a requirement for effective management and audit in today's hospital environment. This paper discusses some of the principal requirements of a computer program for comprehensive orthodontic department management and describes in detail one system.*

Index words: Audit, Computers, Management, Orthodontics.

Introduction

All hospitals and orthodontic units are under considerable pressure to perform in today's NHS. In addition to providing a comprehensive diagnostic and treatment service to patients, they have to be able to demonstrate that they can be well managed, meet targets and be cost effective. Each department is also responsible for carrying out both process and clinical audit.

It is essential that any department is able to demonstrate what it is doing and have information readily available. On many occasions, a range of information is required at very short notice and, therefore, any system that is used to store the data must be flexible, easy to use by non-specialists (either computer or clinical) and able to produce accurate clear information.

Computers are now small and powerful enough to provide data very quickly. In order for a computer-based management system to have a positive benefit over the conventional paper method of data storage, it must be easy to use, stable, and compatible with other software. It must also have the capacity to be upgraded and to be adaptable to work with new software and hardware. The data must be able to be extracted in a form that can be used by other people and other available products. It should be obvious to the user that the data entered will have a positive advantage for them. The ability of a system to produce automatic letters or information that is otherwise laborious or difficult to collect will encourage the user to enter the data.

Some of the other advantages of a computerized system include the ability to search for information quickly, as well as being able to filter data to extract specific information only. In addition, it should also allow all information to be held in one place, whilst being accessed from a number of sites. This is the fundamental advantage of networking. This allows easy data entry and back-up from a variety of sites.

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The disadvantages of computerized information must also be recognized. The true cost of PC ownership-maintaining and upgrading software, sorting problems, cost and availability of expertise, data entry errors, information overload, as well as data misrepresentation is not inconsiderable particularly in an environment where there is a limited amount of expertise and multiple users. In addition, the input of information is one of the most crucial areas in computer databases, it is essential that data entry is user friendly, easy, reliable, quick, and accurate.

An important consideration of any system is the way in which data is entered. This can be done by typing or using the mouse to 'click' options, bar coding (as in supermarket checkouts), or by scanning preprepared sheets. All have their advantages and disadvantages. The first option is very quick if you have someone with the appropriate typing skills and secretaries favour this. The second is easy for non-computer typists to do. However, it does not deal with the demographic data or the patient's name, as this has to be entered by keyboard. The third option is quick and simple, but is expensive and also requires patient details to be entered by hand.

A hospital orthodontic department must be able to identify patients who are referred to the department, by whom and from which particular area or district. It is important to know how long patients have waited for appointments and the disposal of them once they have been seen. For staff within the department knowledge of the length of waiting lists, what type of cases are awaiting treatment and which grade of staff should treat them is also important. For members of the department, particularly junior trainees it is essential to be able to analyse case mix and maintain a comprehensive logbook. This information is also essential for trainers within a unit, as well as between units. Research and audit are an integral part of a hospital orthodontic department and any computer system must be able to identify those cases that belong to a specific group or have particular features of interest. From the support staff point of view there has to be some positive advantages to

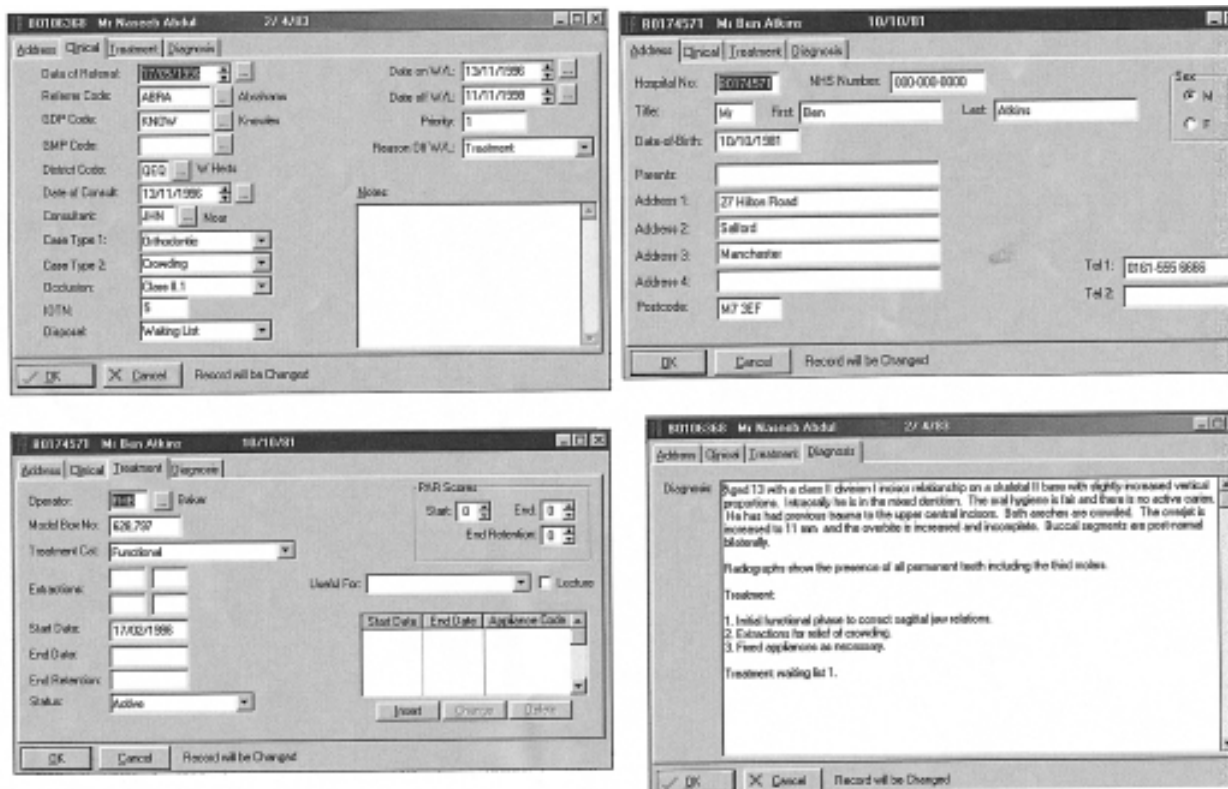


Fig. 2 Address, Clinical, Treatment, and Diagnosis screens.

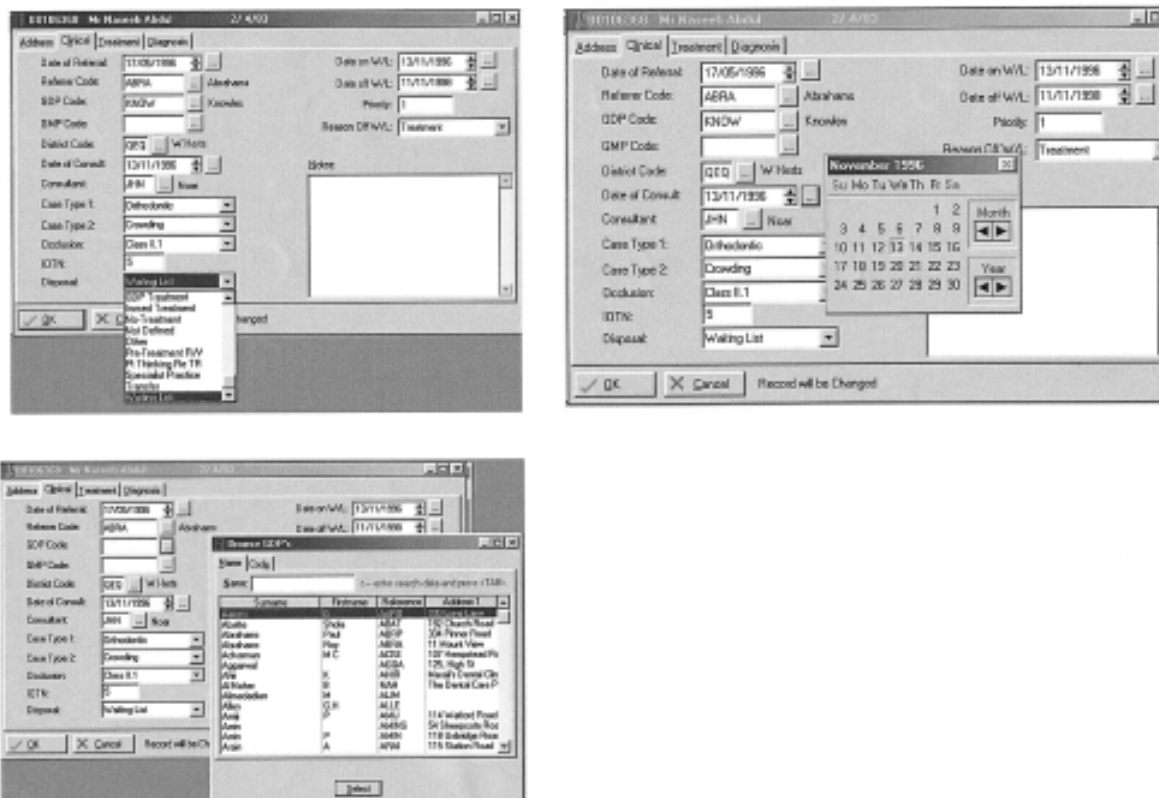


Fig. 3 Data Entry screen showing drop down boxes and data entry fields.

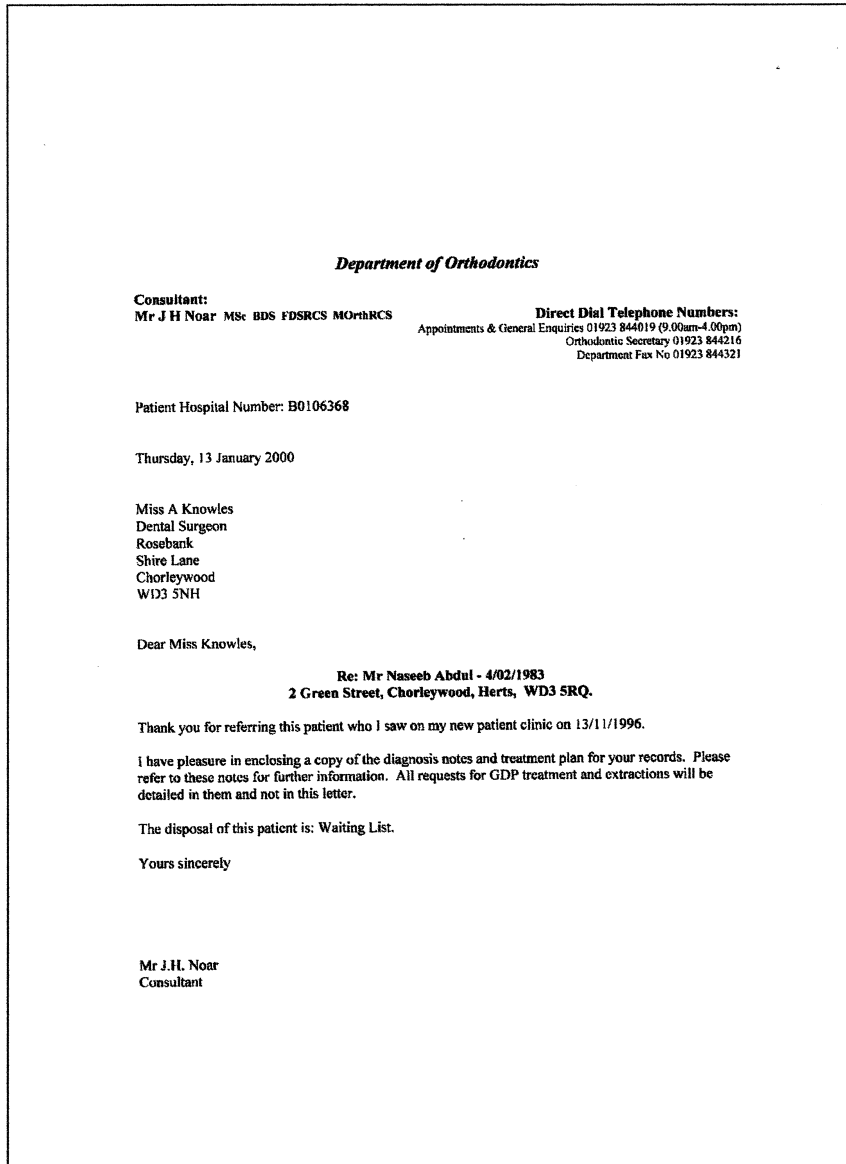
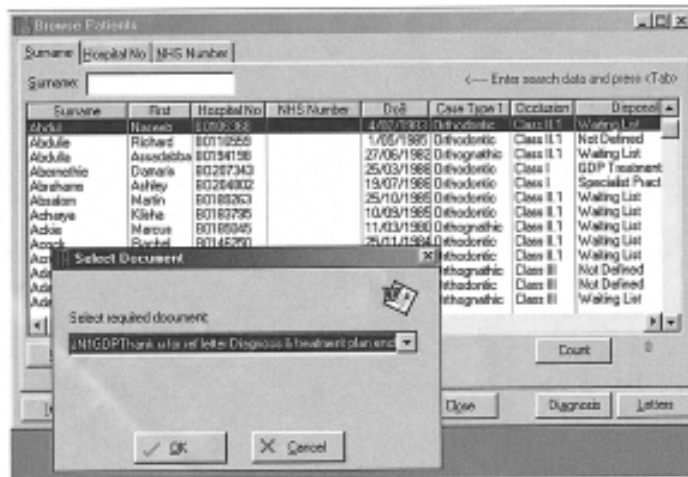


FIG. 4 Letter Selection screen and sample letter.

- OPAS also has its own word-processing module for those not using Microsoft Word for Windows.

A number of standardized letters are held in the letters directory, which is automatically displayed, on the screen. Select the one of your choice, and the patient information and treatment details are automatically added. Individual letters can be constructed by a combination of typing and inserting patient database fields.

Import/Export Facility

- An Import facility to allow downloading of data from other systems and main hospital PAS systems.
- An Export facility to ASCII or .dbf formats for analysis in either spreadsheets or databases to enable research/audit and statistical analysis.

Pressing the Import option on the Utilities menu allows downloading of data from other systems and uploading of hospital PAS systems from Drive 'A'.

Integrity Checks

These allow the data to be regularly checked to ensure it is coherent. A predefined search looks for inconsistencies such as a consultation data that is before a referral data. The results of the search are displayed and the individual record edited. This facility is sectioned to give four levels of check to allow for essential information to be added without having to look at every field.

Fully Flexible Query Facility (Figure 5)

This allows complete individualized searches of the database for audit and research purposes. To enter this facility select it from the Reports menu. The Query Wizard will guide you through the process of selecting criteria to enable individual pieces of information to be collected. This facility allows the selected records to be printed downloaded or edited. Complex searches can be built up and saved for re-use.

A Utilities Program

This is used for setting up of passwords and defining users to protect unauthorized use.

Help Menu

There is a full help facility that answers most questions and difficulties.

System Flexibility

Menu options allow the various data files in the system to be viewed and edited to be specific to each department. These files include files relating to the patients, operators, consultants, districts, referrers, GDP's and appliances. Audit reports produce a 1-page summary of various statistics. A set of dates (e.g. start and finish) can be entered in order to produce a 'snapshot' of the situation at a given time.

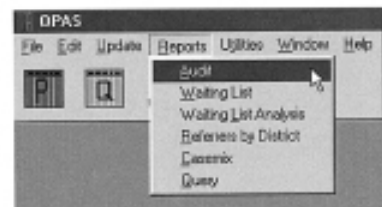
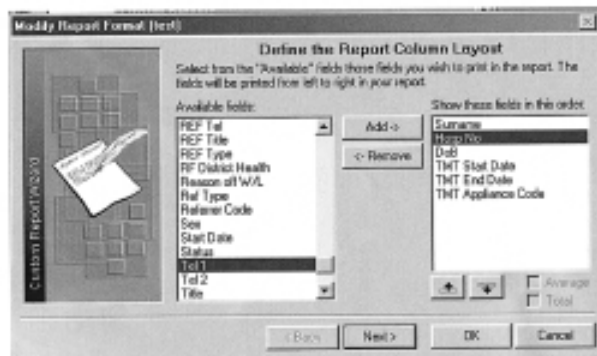
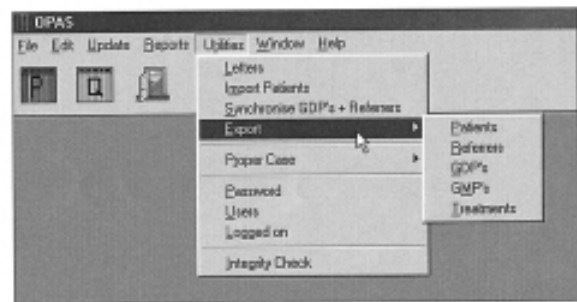
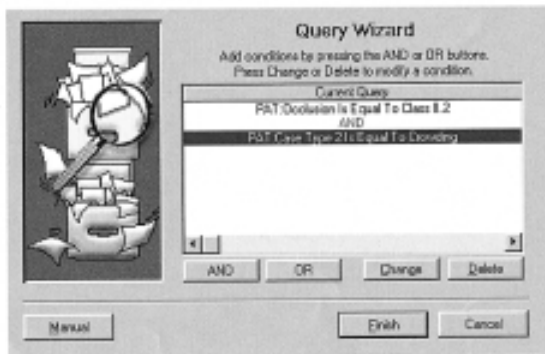


FIG. 5 Data Query screens and Utilities menu.

Waiting lists are printed out by priority; patients are listed by their position on the list. In addition, a single page summary report detailing the number of patients and how long they have had a wait for consultations can be produced. A summary report detailing the number of referrals from each District in a given time span can be produced.

The case mix report produces a list of all cases for a given operator. The Utilities menu allows standard letters to be created and modified, and data to be imported or exported. The following files may be exported for further analysis in other software (e.g. Excel, etc.): patients, referrers, GDP's and appliances. Passwords to be changes and users to be added. There are a number of different levels of user to ensure the system is not corrupted.

Conclusions

The OPAS system is easy to use, particularly by support staff and provides a full department management tool for a hospital orthodontic department. The present users have a yearly upgrade and all suggestions by users if incorporated in their system are passed on to all other users on a yearly basis.

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