

# Research and development in primary care computing

Royal College of General Practitioners and General Medical Services Committee  
Joint Computer Policy Group

### Introduction

**I**N accordance with its central purpose of advising its parent bodies on relevant policies, the Group has set out in this paper its views about the needs for research and development in primary care computing. While these recommendations are intended to be comprehensive, it would be wrong to regard them as exclusive. Other requirements, which at present we cannot foresee, will undoubtedly become apparent in the future.

This paper deliberately excludes any suggestions about the mechanisms through which the research may be conducted. It is intended as a guide to those who may be contemplating research and development in this field, and to those bodies who may be requested to fund this activity.

### Objectives

The ultimate objective is the development of a highly effective and efficient general practice information system. The characteristics of such a system were described in the College's report on computers in primary care (RCGP, 1980) but, for convenience, we reproduce them here.

1. The record system must be readily acceptable by doctors so as to facilitate and encourage the provision of a high standard of patient care.

a) The system should assist the primary care team to apply good community medicine to the practice population. To do this it is desirable to identify groups of patients at risk, so that health education, screening, immunization and other techniques of preventive medicine can be economically applied. For this purpose the team will require, for example, lists by sex of patients in particular age ranges, with particular illnesses, those undergoing treatment with particular drugs or any combination of these specifications.

b) The system should be so structured that it prompts

the doctor to undertake or avoid particular actions that he or she might otherwise overlook. This is especially important in the long-term surveillance of chronic illnesses, in preventive medicine and in the avoidance of drug interactions and allergies.

c) The record should remind the doctor at the time of the consultation of up-to-date practice in diagnosis, treatment and management relevant to the patient's needs.

d) The system should provide a record of clinical material structured in a form which can be used for undergraduate, vocational and postgraduate teaching, including self-assessment by the doctor.

2. The record must be stored in a manner which fully satisfies the demands for confidentiality.

3. The method of storage and transmission of the record must ensure that there is negligible risk of losing it temporarily or permanently.

4. The contents of the record must be readily accessible, legible and easily updated by a doctor working under pressure.

5. It must be possible to remove redundant information and, if desirable, to summarize it quickly and easily during normal use of the record.

6. The system must be of adequate capacity for the storage of a lifetime record of relevant information for every patient.

7. The whole or appropriate parts of the record should normally be easily available whenever required.

8. With the total exclusion of any patient identification particulars, the system should be capable of providing accurate data for health service management at district, area, regional and national levels.

9. Similarly, the system should facilitate clinical and organizational research.

10. A record must be rapidly and securely transferable when the patient registers with a new doctor. There must be no possible access to the clinical data during the transfer process.

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practitioner committees, but also because the extremely high cost of the software development and maintenance will probably be economic only if developed on a nationwide (UK) basis.

e) *Compatibility of manual and electronic clinical records.* This will permit the gradual changeover from manual to electronic records, and is an essential feature of the philosophy of gradual introduction.

f) *Single entry principle.* This simply means that ultimately there should be no need to copy manual records for computer entry. If adhered to, this principle will ensure that all data required for the information system are collected automatically during the normal working of the practice. The principle will require gradual introduction.

g) *Confidentiality.* There can be no argument about this requirement. There is no technical difficulty in maintaining confidentiality within the practice, but the problem of ensuring confidentiality for medical data transmitted electronically outside the practice needs closer scrutiny.

h) *High security.* A much higher level of operational security would be required in a clinical system than would be acceptable in a commercial organization. This still needs research and development in order to ensure that the operation of the system can continue in spite of the breakdown of parts of the hardware and during periods of interruption of the electricity mains supply.

#### 4. Education and training

This is a big task. It needs market research to establish current attitudes and, if agreed to be desirable, a public relations programme with the objective of selling computerization to the profession. If successful, this programme may well result in the demand for:

a) Formal courses about computers (the Open University might be a valuable resource).

b) Familiarization. The suggestion for the installation of a single-terminal micro-computer in a substantial number of practices might be justified in this way. Unfortunately, the limitations of such a simple system might actually have an adverse effect.

c) A small, portable demonstration system using a small (perhaps 100 patient) imaginary model practice might be extremely useful. Although the data storage capacity would need to be of modest size, it would require a comprehensive set of software.

#### 5. Data base compilation

These are the 'information packages' discussed in *Computers in Primary Care* (RCGP, 1980). Drug information is the most obvious need, and this requires a great deal of research and development both to initiate and maintain the data base, especially if, as envisaged, updating is to be achieved through a viewdata network.



Calm but alert.

**STEMETIL**  
PROCHLORPERAZINE  
in anxiety

5mg tds - no withdrawal symptoms, sedation unlikely



## COLLEGE ACCOMMODATION

Charges for college accommodation are reduced for fellows, members and associates. Members of overseas colleges are welcome when rooms are available, but pay the full rate. All charges for accommodation include a substantial breakfast and now include service and VAT.

Children aged 12 and over can be accommodated when accompanied by a parent. Accompanied children aged between six and 12 may be accommodated upon a trial basis. Children over six may use the public rooms when accompanied by their parents. Younger children cannot be accommodated, and dogs are not allowed. Residents are asked to arrive before 21.00 to take up their reservations, or if possible, earlier.

From 1 April 1981, the room charge per night will be

	Members	Full Rate
Single room	£12	£22
Double room	£24	£44
Flat 1	£37.50	£55
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Enquiries should be addressed to:

**The Accommodation Secretary,  
Royal College of General Practitioners,  
14 Princes Gate, Hyde Park,  
London SW7 1PU.  
Tel: 01-581 3232.**

Whenever possible, bookings should be made well in advance and in writing. Telephone bookings can be accepted only between 09.30 and 17.30 on Mondays to Fridays. Outside these hours, an Ansafone service is available.

### Members of the Policy Group

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### Reference

Royal College of General Practitioners (1980). *Computers in Primary Care. Occasional Paper 13*. London: *Journal of the Royal College of General Practitioners*.

### Address for further copies

Copies of the typewritten manuscript of the report (not reprints) are available from Central Information Service, Royal College of General Practitioners, 14 Princes Gate, Hyde Park, London, SW7 1PU.

## Diagnosis of epilepsy with home video-cassette recorder

The writer reports a case of a woman who had been having attacks during her sleep but whose family could not adequately describe them. The family had a video-recorder and set it up so that it filmed her whilst asleep. A seizure was recorded, readily recognized by her doctors, and treatment was begun.

Source: Newmark, M. (1981). Letter. *New England Journal of Medicine*, 305, 769.

## Fetal head growth and treatment for epilepsy

Follow-up of 133 epileptic pregnant women showed that carbamazepine alone and combination therapy containing phenobarbitone given during pregnancy are associated with fetal head growth retardation. Mean head circumference (standardized for gestational age and sex) of babies born to mothers on carbamazepine alone was 7 mm less than that of controls ( $p < 0.01$ ); and mean head circumference of babies born to mothers on pheno-barbitone-containing combinations was 6 mm less than that of controls ( $p < 0.05$ ). No catch-up growth occurred by the age of 18 months. Mean head circumference could not be explained by a variety of potential confounding maternal factors, nor by fits or complications during pregnancy and delivery.

Epileptic pregnant women require anticonvulsive treatment, and low-dose phenytoin monotherapy is suggested as a good choice.

Source: Hiilesmaa, V. K., Teramo, K., Granstrom, M. L. *et al.* (1981). Fetal head growth retardation associated with maternal anti-epileptic drugs. *Lancet*, 2, 165-167.