Can general practice provide useful information? – evaluation of a primary health care information project in northern England

Alison E Wilson, Colin Pollock, Tony Weekes, Anthony Dowell

Abstract

Objective – To develop a computerised primary care information gathering network capable of producing reliable risk factor and morbidity data from a wide diversity of general practice software systems.

Method – Fourteen practices from the Wakefield and Pontefract district collaborated in sharing information and solving technical difficulties associated with collecting data on coronary heart disease (CHD) risk factors, diabetes, and asthma. Practices also participated in rheumatology and mental health needs assessment projects.

Results – Data could be transferred by diskette in only five of the systems and paper reports had to be used to post process the data into a standard format. Not all data were complete or comparable. Crude estimates only of smoking prevalence and smoking cessation interventions were possible, as well as of age and sex specific prevalences for asthma and diabetes. The rheumatology health needs assessment, using the prospective collection of consultation based data, highlighted an unmet need for rheumatology services in the community.

Conclusions – Although practices have been willing to devote considerable time and effort to the project, the diversity of software has precluded a simple methodology for data collection and analysis. The amount of useful information retrieved so far, has been limited but a number of important lessons have been learned which have implications for similar information projects and the use of primary care information in service planning.

(*J Epidemiol Community Health* 1995;49:227-230)

to identify trends in the health of the population and their health needs, monitor treatment outcomes, and examine the achievement of health targets.

The benefits of general practice computing for patient care, practice administration, planning, and audit are well recognised.^{3,7} As yet, however, there is a largely underutilised potential for using high quality primary care data for other purposes, including health needs assessment, and for evaluating health care programmes.⁴

Reported difficulties associated with this process include incomplete registers of chronic disease⁵ and the absence of common disease definitions or compatible computer software.⁶ Addressing these issues, however, requires a commitment from general practitioners which must compete with other demands on practitioners' increasingly limited time.

General practices have received financial support to encourage computerisation through a reimbursement scheme administered by family health service authorities (FHSA). This has resulted in a dramatic increase in the use of computers in general practice, from only 10% in 1987 to 71% in 1993, and it is envisaged that this trend will continue.⁷

Up to 50% reimbursement of the purchase cost and 70% of initial staff costs are currently available for setting up a system in general practice.⁸ Some FHSAs are now rethinking their computer reimbursement policies, however, to release cash-limited general medical services monies for other developments such as cost-rent schemes for practice premises. Since 1991, GP practices that control their own budgets (fundholders) have been able to claim additional costs of supporting fundholding activity. Some FHSAs have appointed computer facilitators to advise practices on GP computing. The Primary Health Care Specialist Group (PHCSG) of the British Computer Society and the Royal College of General Practitioners (RCGP) have also provided advice, literature, and a network for support.

The growth and array of commercially available systems, all purporting to solve the GPs information needs, have been substantial. Vamp and A A H Meditel are currently the most popular systems in use, although a variety of other systems offering a number of different functions are used by practices.⁷ Selecting the system which best suits the needs of the practice is not easy.

In 1990 the Department of Health produced a document, *GP Computing* aimed at providing

Centre for Research in Primary Care,
30/32 Hyde Terrace,
Leeds LS2 9LN
A E Wilson.
A C Dowell

Wakefield Healthcare,
White Rose House,
West Parade,
Wakefield
C Pollock
T Weekes

Correspondence to:
Mrs A E Wilson.

Accepted for publication
January 1995

Information technology, and the use of information, has begun to play an increasingly important role in general practice. Recent government papers have emphasised the need for the continued development of computerisation in primary care and the use of information in planning cost effective services, responsive to patients' needs.^{1,2}

Ninety eight per cent of the population are registered with general practitioners (GPs) and 90% of all illness presents through general practice. This provides a unique opportunity

GPs with basic information on important aspects to consider when purchasing or leasing a computer system.⁹ Recent departmental guidance on criteria for accreditation for new computer systems¹⁰ has attempted to establish some order from the chaos. Many systems, however, are unable to meet all the information requirements of modern primary care, and those which do have the appropriate software capabilities are largely underused by the practice.¹ There has been limited availability of relevant training or support from the software houses and an inability to respond quickly to changing practice needs, such as fundholding.

The Wakefield and Pontefract primary care health information project was established in April 1992 with the aim of developing a computerised primary care information gathering network with the following specific objectives:

- (1) To establish routine and reliable data collection of risk factors and specific morbidities;
- (2) To assess the possibility of electronic data transfer for centralised collection and analysis;
- (3) To examine the usefulness of that information for health needs assessment.
- (4) To encourage practices to develop further their present information systems.

This report aims to highlight some of the successes and difficulties experienced in the first phase of this project, while trying to improve the quality and usefulness of primary care information. Many FHSA's and district health authorities are now looking to primary care for information to help monitor health trends within *Health of the Nation* target areas and to commission high quality health care. Some of the implications of the work of this project so far will, therefore, be of importance.

Method

PROJECT RESOURCES

The project was funded from a variety of sources including the FHSA, the Wakefield and Pontefract District Health Authority and the regional health authority. Practices were awarded a one off payment from the general medical services budget to support staff training and computer work during the project.

A social statistician with experience in information systems, was employed to:

- (a) Evaluate the practice computer systems and information sources;
- (b) Liaise with systems developers and other local morbidity information projects.
- (c) Facilitate the development of the morbidity information network.
- (d) Retrieve and analyse data.

Data input where necessary was undertaken within the FHSA. The University of Leeds, Centre for Research in Primary Care (CRPC) provided the project with academic support.

RECRUITING PRACTICES

The medical director of the FHSA and a senior registrar in public health medicine recruited 14

practices, selected according to their willingness to collect routine morbidity and risk factor data. It was hoped these data would ideally be "downloaded" from the practice computer systems on a routine basis.

There were no "minimum standard" requirements set for inclusion as the project is essentially concerned with practice development. Practices therefore demonstrated a broad range of computer expertise and practice organisation.

The number of GP's per practice ranged from two to six partners, and practices were a mixture of inner city, suburban, and rural practices. Many of the practices are located within the former Yorkshire coalfield or woollen manufacturing district and serve areas of economic deprivation and social stress.

BUILDING THE NETWORK

During the first three months of the project, visits were made to participating practices to discuss:

- (a) Definitions and protocols for diagnosis of selected morbidities;
- (b) The current level of data recording on computer and the practice's plans for making improvements where necessary;
- (c) Clinical coding systems;
- (d) The generation of reports, including accessibility and electronic transfer.

Results of the first year of the project

SYSTEM INCOMPATIBILITY AND AGGREGATION OF DATA

The Wakefield and Pontefract project is unusual among primary health care information projects in that eight different GP computing systems are in use across the network of collaborating practices, and at the start of the project there were four clinical coding structures.

This diversity presented several problems. Not all systems, for example, could deliver reports of age-sex distributions in standard age bands. There were also difficulties in interpreting the data, because of the different coding structures and definitions used by the practices.

Data could be transferred easily by diskette by only five of the systems, the other practices could only produce reports in paper form. With some experimentation by practice staff and the project team, it was later possible to process reports into a standard format, although comparable information on certain topics could not be gathered from all practices.

REQUESTS FOR DATA

Once the aims of the project had been discussed with the practices, they were told to expect requests for data downloads on a regular basis. Practices have difficulty, however, in supplying the requested information within agreed deadlines.

The pragmatic decision was taken at this stage to encourage practices to provide whatever they could and in whatever format was feasible. Differences between the data that practices supplied, highlighted practice staff capabilities as well as those of the system itself. Data downloads were usually performed by practice staff and had to be fitted into their usual workload. Even though practices could be reimbursed for staff time, with little protected time to work on the project, few training courses available, and little help from system developers, only limited data "trawls" were possible.

USING THE INFORMATION

As data were often incomplete, use was necessarily limited to individual practice requirements. External aggregation of the data produced some interesting findings but the level of detail was more limited than had been hoped. For example, only crude estimates of smoking prevalence with an age-sex distribution, frequency of recording different levels of information, and some information about smoking cessation interventions were possible.

In addition, age and sex specific prevalence rates were calculated for asthma and diabetes. As before, however, the findings have limited use, as practices admitted that morbidity registers may be incomplete and figures actually reflect morbidity for "recorded" information only. This level of reliability is not helpful in health needs assessment or for making planning decisions.

USING THE NETWORK TO DEVELOP HEALTH NEEDS ASSESSMENT METHODS

Rheumatology

The practices were willing to collaborate in a project to determine general practice management, referral patterns, and service deficiencies for disability related to musculoskeletal problems. Consultation based data collected over a 24 hour period, proved effective in highlighting areas of unmet need.

The study highlighted a new referral rate of 10% of consultations for musculoskeletal complaints, which is twice as high as that found in other similar studies. The results showed an unmet need for rheumatology services which should be provided in the community. The information was used in addition to data from other sources to address this problem area and a further consultant in rheumatology was appointed as a result.

Mental health needs assessment

This project also used the practices to obtain a sampling frame to define the prevalence of mental health problems and to elicit the views of the population about mental health service provision. Further work to complement these data was undertaken to study the views and needs of carers and users of local mental health services.¹¹

Recommendations from this study are being taken forward in defining a mental health strategy for the health district, which will focus in primary care assessment and treatment services.

Discussion

We are not aware of any other local information project which has this diversity of systems among its collaborating practices and we have acquired considerable breadth of experience in understanding the capabilities and limitations of different primary health care computer systems.

Our experience has highlighted a number of issues in relation to the development of the systems and the use of practice generated information. This is of importance given that the work was begun before the introduction of the revised GP Health Promotion Contract which has concentrated on the collection and use of lifestyle and morbidity information in the prevention of coronary heart disease and strokes.

The quality of the information available depends upon a number of factors. These include the software system and coding structure used by the practice; the availability of support (for example from FHSA, system developers, or a project team such as ours); and the computer skills and motivation of practice staff.

Data are often entered on the computer by different members of the practice team. Lack of coordination or agreement between staff members (including doctors) on what and when to record information presented some difficulties with consistency of data recording. In addition, considerable variation in computer literacy was noted between practices.

We found, however, that the motivation of the staff was generally high and they expressed a keen interest in attending local training, to improve their skills.

Lack of protected time to develop the system was a major handicap and support from the software companies for problem solving, training, or providing user friendly literature was extremely variable. The project team, however, was able to liaise with system developers – with some degree of success. Unfortunately, FHSA resources to support practice information technology are generally limited and are usually focussed on FHSA registration departments. There are few local user networks able to support such a diverse set of needs.

Some practices were willing to devote considerable time and effort to help solve some of the technical difficulties encountered. Providing feedback on the information generated has been useful for purposes such as health promotion banding and other reports that practices have been required to produce and has also stimulated interest in the epidemiology of the practice population and of the area the network covers.

We are aware that more needs to be done to develop effective information feedback to practices to encourage discussion of variables such as the reasons for identified prevalence differences for morbidity.

Concern has been expressed about the value of practice generated information, even with regard to some of the more basic data requested from GPs.¹² The issues of current validity and completeness of data have presented us with problems, particularly when attempting to analyse aggregate data for health needs assessment or when using this to help make planning decisions.

Health needs assessment should help purchasers make informed purchasing decisions and provide primary health care teams with more information about their practice population, both of which should bring about measurable health gain. Although we may be making some progress in reaching this goal, it is unfortunate that the accreditation scheme for new practice computer systems which came into being in April 1994 has not adequately addressed the problem of retrieving data for "epidemiological" purposes. This must be regarded as a missed opportunity even though the impact of health needs assessment on decision making and service development has yet to be evaluated fully.

Our experimentation with different health needs assessment methods, including 24 hour consultation-based reporting and practice-based patient interviews, rely greatly on the good will of the practices. Demonstrating positive outcomes such as the appointment of additional consultants and changes in service provision help to foster this good will.

Conclusions

The first phase of this project has been valuable for a number of reasons. It has shown a willingness to communicate and collaborate on projects of common interest between FHSA, PHM, the purchasing authority, the Medical Advisory Audit Group and general practices. Practices have shown high levels of trust and cooperation and a willingness to participate in projects of this nature.

Methods of extracting information from general practice have been developed which do not rely on computer data only. With some

refinement these data can be used for health needs assessment and service planning.

In addition, even though our original goal of electronic data transfer was not possible, our project has been successful in retrieving data from diverse systems which can be analysed centrally outside the practice.

Current developments, including the development of a standard query language (MIQUEST)¹³ may soon help to solve the problems of data retrieval from diverse systems. A need to ensure the data retrieved is of high quality will, however, remain.

The next phase of our project will therefore address the accuracy, timeliness, and completeness of the data, as well as developing other approaches to health needs assessment in general practice. By ensuring that a dialogue continues between public health physicians and primary care the information needs of both partners can be met. Continued support will be provided to the practices by facilitation and small financial incentives, and to develop a culture of information sharing, feedback, training and involvement in the decision making process will remain priorities.

- 1 Secretary of State for Social Services, Wales, Northern Ireland and Scotland. *Promoting better health*. London: HMSO, 1987 Mmn 249.
- 2 Secretaries of State for Health, Wales, Northern Ireland and Scotland. *Working for patients*. London: HMSO, 1989. CMN 555.
- 3 Gray, DP. *Planning primary care. A discussion document*. London: Royal College of General Practitioners, 1992. Occasional paper 57.
- 4 Paris JAG, Wakeman AP, Griffiths RK. General practitioners and public health. *Public Health* 1992;106:357-66.
- 5 Mant D, Tullock A. Completeness of chronic disease registration in general practice. *BMJ* 1987;294:244-7.
- 6 Pringle M, Hobbs R. Large computing databases in general practice. *BMJ* 1991;302:742-3.
- 7 NHS Management Executive. *Computerization in general practice - 1993 survey*. DOH: London, 1994.
- 8 DOH Welsh Office. *GP computer reimbursement scheme* In: National Health Services statement of fees and allowances payable to general medical practitioners in England and Wales. London: DOH, update July 1991. Para 58.1-58.22.
- 9 Department of Health. *GP computing: information for GPs on practice computer systems*. London: HMSO, 1990.
- 10 Rodgers R. *General medical practice computer systems*. (Letter) 30 April 1993 (IMG) Leeds: National Health Service Management.
- 11 Hagan T, Green J. *Mental health needs assessment - the user perspective*. Wakefield: Wakefield Healthcare, June 1994.
- 12 Wilson A, Dowell T, Pollock C, Weekes T. Room for improvement in data collection. (Letter) *BMJ* 1993;307:381.
- 13 MIQUEST Project Board. *MIQUEST project report Version 3.3*. Northumberland: MIQUEST Project, 1994.