There is a demand for these services,^{7,21} and these facilities are possibly less developed in rural areas. General practitioners have also found intensive courses in diabetes helpful in keeping them up to date and improving their clinical skills.²²

The salary of the ophthalmic photographer, depreciation of the van and camera, running and servicing costs for the van, and the cost of the film and its processing were all accounted for in the calculation of the cost of the service. At £10 per patient screened the service is cheaper than all the alternatives.²³ The costs of transporting patients to the hospital and hospital running costs are not applicable to the mobile eye unit.²³ The cost of £1000 for the identification of each patient that required laser photocoagulation is relatively low. Costs could be reduced further by screening more patients per unit time, and we estimate that it should be possible to screen 2500 patients a year once the screening programme is established (our costs are based on screening 1800 per year).

In conclusion, mobile diabetic eye screening units seem to be particularly effective at identifying previously unrecognised retinopathy in rural areas, at a relatively low cost.

- 1 Williams R, Nussey S, Humphreys R, Thomson G. Assessment of non-mydiatic fundus photography in detection of diabetic retinopathy. *BMJ* 1986;293:1140-2.
- 2 Taylor R, Lovelock L, Tunbridge W, Alberti K, Brackenbridge R, Stephenson P, et al. Comparison of non-mydiatic retinal photography with ophthalmoscopy in 2159 patients: mobile retinal camera study. *BMJ* 1990;301:1243-7.
- 3 Nathan D, Fogel H, Godive J, Lou P, D'Amico D, Regan C, et al. Role of diabetologist in evaluating diabetic retinopathy. *Diabetes Care* 1991;14:26-33.
- 4 Rogers D, Bitner-Glindzicz M, Harris C, Yudkin J. Non-mydiatic retinal photography as a screening service for general practitioners. *Diabetic Med* 1990;7:165-7.

- 5 Higgs E, Harney B, Kelleher A, Reckless J. Detection of diabetic retinopathy in the community using a non-mydiatic camera. *Diabetic Med* 1991;8:551-5.
- 6 Leese G, Newton R, Jung R, Haining W, Ellingford A. Screening for diabetic retinopathy in a widely spaced population using non-mydiatic fundus photography in a mobile unit. *Diabetic Med* 1992;9:459-62.
- 7 Higgs E, Simpson H, Reckless J. General practitioner based diabetic care—a district survey. *Diabetic Med* 1987;4(suppl):577A.
- 8 Snedecor G, Cochran W. *Statistical methods*. 6th ed. Iowa: Iowa State University, 1967.
- 9 Carstairs V, Morris R. *Deprivation and health in Scotland*. Aberdeen: Aberdeen University Press, 1991.
- 10 Wareham N, Flatman M, Astbury N, Greenwood R. Establishing an eye screening programme in a rural health district. *Diabetic Med* 1990;7(suppl 2):32A.
- 11 Jones R, Larizgoitia I, Casado L, Barrie T. How effective is the referral chain for diabetic retinopathy. *Diabetic Med* 1989;6:262-6.
- 12 Dornan C, Fowler G, Mann J, Markus A, Thorogood M. A community study of diabetes in Oxfordshire. *J R Coll Gen Pract* 1983;33:151-5.
- 13 Kohner E, Aldington S, Nugent Z. United Kingdom prospective diabetes study. Retinopathy at entry in the UK prospective diabetes study. *Diabetes* 1987;36(suppl):42A.
- 14 Yudkin J, Boucher B, Schopflin K, Harris B, Claff H, Whyte N, et al. The quality of diabetic care in a London health district. *J Epidemiol Community Health* 1980;34:277-80.
- 15 Whitford D, Avery A. Barriers to comprehensive diabetic care in the Northern region. *Practical Diabetes* 1989;6(3):114-6.
- 16 Hill R. Community care service for diabetics within Poole area. *BMJ* 1976;i:1137-9.
- 17 Reith S. A shared-care option in a semirural area. "Shared care in diabetes." *London Update* 1985;10:24-30.
- 18 Tattersall R. The future role of the diabetes specialist nurse—responsibility without authority. *Diabetic Med* 1986;3:166-7.
- 19 Spathias G. Facilities in diabetic clinics in the UK: Shortcomings and recommendations. *Diabetic Med* 1986;3:131-6.
- 20 Challen A, Davies A, Williams R, Baum J. Support for families with diabetic children: parents' views. *Practical Diabetes* 1990;7(1):26-31.
- 21 Hayes T, Harries J. Randomised controlled trial of routine hospital clinic care versus routine general practice care for type II diabetics. *BMJ* 1984;289:728-30.
- 22 Houghton G, Wall D. Does an intensive residential course on diabetes for general practitioners improve the care of diabetes in the practice. *Practical Diabetes* 1990;7(4):174-8.
- 23 Sculpher M, Buxton M, Fergusson B, Humphreys J, Altman J, Spiegelhalter D. A relative cost-effectiveness analysis of different methods of screening for diabetic retinopathy. *Diabetic Med* 1991;8:644-50.

(Accepted 17 November 1992)

The Future of FHSAs

Developing a research and development strategy for primary care

Andrew Harris

This is the third in a series of articles on the future of family health services authorities

"Research is vital to improve standards of patient care. It increases knowledge and fosters a critical attitude to existing patterns of care and treatment," reported the royal commission on the NHS in 1979.¹ The report went on to comment on the absence of objective criteria for setting health priorities and to emphasise the need for health service research to be multidisciplinary. Innovation has, however, been largely driven by hospital consultants and scientists with specialist interests in diseases and treatment. Research priorities have reflected this, to the neglect of evaluation of current practice.

Three recent significant changes have created a great opportunity to focus research on the health needs of the population. The first is the creation in 1990 of the purchaser and provider split in the NHS, which gave commissioning authorities (district health authorities and family health services authorities) powers and responsibilities to develop health care strategies and purchasing plans that maintain good health and maximise health gain. The second is the development of medical audit, which encourages practitioners critically to examine current practice. The third is the establishment of a research and development strategy for the NHS in 1991 under the direction of Professor Michael Peckham. Its prime objective is "to see that R&D becomes an integral part of health care so that clinicians, managers and other staff find it natural to rely on the results of research in their day to day decision making and longer term strategic planning."

The strategy is currently being developed by regional health authorities, which have the responsibility to plan a coherent programme. To be successful the regional plan will need to encompass research and development at the grass roots level in communities and primary care settings. This is an enormous challenge for family health services authorities, which should, together with the regional health authority, develop a local strategy for research and development activity in primary care and establish targets for appropriate spending.

Resources

Most patients are managed in primary care but the vast majority of research publications derive from hospitals. In South East Thames Regional Health Authority about 0.96% of the NHS spend is on research and development, of which only 0.03% is recorded as for primary care. Correcting this imbalance should be a priority for family health services authorities. The financial resources proposed by the secretary of state to support the strategy are intended to move over a 5 year period from 0.8% of the total NHS budget to a target of 1.5%. On a pro rata basis this might make £92.7 million available to primary and community care.

Only 15% of health research is currently funded by the Department of Health or NHS, the bulk being funded by pharmaceutical companies and medical

Lambeth, Southwark and Lewisham Family Health Services Authority
Andrew Harris, director of clinical policy and research

Series editor: Dr Andrew Harris.

BMJ 1993;306:189-92

equipment companies. Family health services authorities must aim to attract the bulk of the target spend on family health services from NHS funds.

What should family health services authorities do?

Family health services authorities should have already identified a lead officer for research and development. This may be the medical adviser, whose background as a partner in general practice is particularly useful in three ways. Firstly, he or she will have an understanding of primary care, especially clinical presentations in general practice. Secondly, the medical adviser will appreciate the variety of ways of delivering care within a practice and can ensure that research into processes of delivery of care is not neglected. Thirdly, medical advisers tend to be pragmatic and able to address the key consideration in developing health service research, which is whether or not organisational factors pose immutable barriers to implementing the research findings.²

The multidisciplinary nature of primary health care must be appreciated and appropriate research developed to include, for example, community dental practitioners, optometrists, community nurses, pharmacists, physiotherapists, and health educationalists. Family health services authorities should establish a multidisciplinary primary care research strategy group, drawing where possible on local academic departments of general practice and public health and with district and regional public health medicine representatives. This would permit an accurate assessment of current purchaser and provider research and development activity, interest, expertise, and capacity and develop a framework for maintaining this.

Commissioning authorities should outline their current commissioning priorities and highlight the research needs of their health strategies and primary care developments. In particular, family health services authorities should consider which skills they require "in house" and which they need to "buy in". At present it seems that they will wish to lead their own purchasing of intelligence and perform research analysis; they should develop sufficient statistical and epidemiological skills to conduct surveys and evaluate small projects on service developments and contractual monitoring, and have the expertise to commission larger pieces of work. Exciting possibilities exist for collaboration with academic departments of general practice and other primary care disciplines, such as attachments, exchanges, joint research posts, and the joint formation of independent service research

units, fostering research and development on multi-disciplinary teamwork and integrated care.

Research strategy for commissioning

It is the responsibility of fundholding general practices to decide priorities for research in the context of the population's needs and the contracts set with each provider. Current patterns of service need to be critically assessed and feasibility or pilot studies implemented to inform new strategies. Our multiethnic area has the highest rate of termination of pregnancy, and a literature search showed that we needed to commission research to identify AfroCaribbeans' perceptions of family planning.

Family health service authorities should ensure that their arguments are backed up with research evidence when negotiating contracts with regional health authorities and in discussions with the Department of Health. Some of the general practitioner contract's³ requirements, such as check ups every three years and deprivation payments, either ignore the findings of research⁴ or have no supporting evidence. The new agenda of the *Health of the Nation* may result in commissioning authorities adopting inappropriate or unattainable local objectives unless research evidence is applied. Purchasers have a responsibility to ensure that research is commissioned to evaluate properly the effects of the NHS changes. With third wave fundholders preparing to manage their own budgets, there is the opportunity to record baseline data or survey patients' perceptions in order to monitor trends or compare experience before and after fundholding. The new health promotion package in the revised general practitioner contract clearly should be evaluated. Opit and Holland classify NHS development research into three categories (box).⁵ They further describe research as covering quality, distribution, accessibility, outcome, and effectiveness, as applied to professional health care (self care or public health activity).

QUALITY

Berwick *et al*, in their work on quality assurance activities, emphasised two principles: that the key to better quality care is striving for continuous improvement rather than identifying bad apples, and that most flaws come from processes, not people.^{6,7} Only one in 12 instances of poor quality can be ascribed to insufficient effort by the practitioner. Research is needed to improve understanding of health care as a system and overcome functional barriers to delivering high quality care.

DISTRIBUTION AND ACCESSIBILITY

The substitution of services between primary and secondary care is a high priority on national and local management agendas. Proper evaluation of changes is crucial if decisions are to be related to patients' needs. A study has been commissioned into domiciliary care compared with hospital care in stroke patients, to be undertaken by the department of public health at the United Medical and Dental School. Two proposals led by my family health services authority are to establish a new pattern of audiological services in primary care for elderly patients operating from general practice rather than ear, nose, and throat departments, and to reach a consensus on the range of conditions that can be cost effectively, appropriately, and equitably treated in general practice by physiotherapists.

OUTCOMES

It is important to develop outcome measures as tools for quality assessment.⁸ A significant trend is taking place from measuring practitioners' competence and activity to measuring health outcomes in populations.

Range of NHS development research^a

Category	Examples	Considerations
Major organisations	Introduction of community care and fundholding	Little impact so far on service development or decisions
Service development	Where clinical options are of similar effectiveness but unknown costs; considering introducing screening programme or day care surgery	It is much easier to introduce a new service than discontinue one. Not only must current practice be evaluated, but the findings of research must be acted on
Small projects	Evaluation of special clinics; the changes resulting from the effect of GP contract; assessment of new equipment; change in pattern of service to improve accessibility; consumer surveys	May be unattractive to researchers trained in vigorous positivist science. The full range of research philosophies must be considered. Observational studies, survey techniques, or action research are valuable in primary care

ULRIKE PREUSS

Some services may be effectively provided in general practice rather than hospitals. Research evidence is required before new patterns can be set up

Research in health outcomes is in its infancy in primary care, but there is an emerging consensus that measures could be developed for the common chronic diseases of asthma, diabetes, and hypertension.⁹ There is also a strong case for making the collection of minimum data sets a requirement for general practitioners.⁷

EFFECTIVENESS

About 20% of care is consistently shown to be inappropriate¹⁰ and only about 15% of medical interventions are based on solid scientific evidence.¹¹ Light claims the NHS comes out badly on the Cochrane test for effectiveness^{12,13}; it is worse than most systems in not treating patients in the most effective place and preventing only what is preventable and poor on openly evaluating effectiveness against non-established alternatives and minimising ill timed interventions. Population screening for cervical cancer is a candidate.

DISSEMINATION OF KNOWLEDGE

Knowledge is an important determinant of an effective and high quality service. Family health service authorities should identify important areas where current knowledge provides an inadequate rationale for the accepted practice and commission research to elucidate it. Examples are treating otitis media with antibiotics and treatments for lower back pain. Also, much practice is based on what was learnt from teaching and vocational training subsequently modified by experience, but does not necessarily reflect current knowledge in all areas—for example, many continue to give repeated routine examination in shared antenatal care.¹⁰ Family health services authorities should foster good practice by disseminating information. For example, the recent articles on minor surgery in general practice could be circulated to those on or applying to go on the minor surgery list.¹⁴⁻¹⁶

An editorial recently went so far as to say that more important than establishing a framework for research and development was doing something about the failure to disseminate and apply existing knowledge.¹⁷ The author went on to recommend this function should be added to the management agenda and a lead officer given responsibility to establish mechanisms for developing it. There is potential for expanding the role of medical advisers in this way.

Primary care needs assessment

The measurement of need in primary care is problematic because there are difficulties in relating

patients' needs. Morrell has usefully classified the diverse needs of a population in general practice (box).¹⁸ General practitioners find themselves already required to divulge cervical smear and immunisation status to family health services authorities and district health authorities, which run the screening programme's recall systems. The new proposals for managing chronic disease and preventing coronary heart disease in the general practitioner's contract's revisions of health promotion payments will also require recording, aggregation, and communication of morbidity data. While good information is critical for needs assessment, general practice is currently poorly resourced or motivated to provide it, and current guidelines on confidentiality are unclear.

General practice research

The disciplines involved in the primary care sector, the problems and services which are the subject of research and development, and the research methods and specialist resources required to support the primary care sector all vary significantly compared with the secondary sector. There are considerable difficulties in mounting randomised controlled trials in general practice. Difficult decisions will need to be made to ensure that commissioned research is sufficiently responsive to the needs of purchasing authorities but at the same time of sufficient scientific rigour to attract good quality academic researchers. General practice research is a minority activity. It is not necessary for career progression, is highly complex, can be isolating, is difficult to apply, has a fragmented structure with poor communications between workers, and is undersupported.¹⁹ There may be a need to consider changes to the general practitioner's contract to encourage research, such as relaxing the regulations of hours committed to patient services and creating a practice development allowance to encourage practices to work with commissioning authorities to adopt and evaluate health gain strategies.

Research ethics

There are considerable grounds for concern about the current handling of ethical issues in general practice research.²⁰ The King's Fund report highlighted the conflicts arising from pharmaceutical companies paying general practitioners to conduct post-marketing surveillance of drugs without this stage being vetted by a research ethics committee. The development of research into prescribing involves general practitioners, pharmacists, and nurses and

Types of problems in a general practice population²⁰

- Acute symptomatic disease needing medical care
- Acute symptomatic disease not needing medical care
- Acute symptomatic illness not explained by disease
- Acute symptoms not perceived as illness
- Chronic disease needing continuing care
- Chronic symptomatic disorders amenable to medical care but with low expressed need as attributed to aging
- Adults with pre-symptomatic disease
- Children with developmental abnormality
- Vulnerable patients who require medical supervision owing to their psychosocial or physical needs

requires detailed guidelines to ensure that patients' privacy is protected and that their needs are not subordinated by commercial or individual financial interests. Despite Department of Health guidelines²¹ family health services authorities do not insist general practitioners apply to their research ethics committee for approval, nor do they monitor research by independent contractors. Health authorities are advised that introduction of new screening programmes requires ethical research committee consent.²² My family health services authority is making plans to establish its own primary health care research ethics committee.

Ensuring that patients participating in drug trials give fully informed consent will need careful handling. Also as the membership and functions of the primary health care team grow and sectoral barriers are broken down, rights of access to patient information are being demanded. Ensuring informed patient consent to release of information to third parties is obtained is important for service research.

Conclusion

Primary health care is at a crossroads. Never has so much been expected of general medical practitioners and practice staff; general practitioners are being pressed to do audit, participate in commissioning, become fundholders, do research, improve consumer responsiveness, and develop new skills in the transfer of services from secondary to primary care and development of community care. It could lead to the dilution and fragmentation of the strengths and skills of the primary health care team. A cool appraisal of the appropriateness, feasibility, and effectiveness of changing roles and patterns of service in primary care is required. This will mean harnessing the experience and aspirations of primary health care workers, the epidemiological skills of public health medicine, the expertise and disciplines of academic departments of general practice, the knowledge of social scientists and health economists, the evaluative and facilitative skills of medical advisers, the managerial expertise of family health services authority officers, and the needs and wants of the consumer.

Undoubtedly the freeing of research funds for health service research creates an opportunity for purchasers and providers to collaborate to maximise the benefit to primary care research, which has traditionally been underfinanced. At the same time, much good practice has developed that needs better dissemination and application. Family health services authorities are in a pivotal position to develop a research and development strategy which ensures that commissioning decisions are based on best available knowledge, that primary health care workers are adequately resourced, skilled, and motivated to participate in the research and development of the services they provide, and that evaluation of current and new patterns of care becomes routine.

Summary

- General practice research has been a minority activity and underfunded in the past
- The creation of the purchaser and provider split, the introduction of medical audit, and the new research and development strategy for the NHS provide an opportunity to focus research on the health needs of the population
- FHSAs, with the regional health authority, should develop a local strategy for research and development and appoint a lead officer, who may be the medical adviser
- When negotiating contracts FHSAs need to back up their arguments with research evidence
- NHS development research should cover quality, distribution, accessibility, outcome, and effectiveness
- FHSAs should play a part in disseminating knowledge in the interests of achieving an effective and high quality service
- GPs should be encouraged to participate in research by relaxing the regulations of compulsory hours of patient service and by creating a practice development allowance

I thank Professors Roger Higgs, Walter Holland, and David Morrell to whom opinions and errors therein cannot be ascribed, Dr Yvonne Doyle for help with references, and Ms Pauline Andrews for typing the manuscripts.

- 1 Royal Commission on the NHS. *Report*. London: HMSO 1979. Cmnd 7615.
- 2 Ashley-Miller M, Watt-Kay A. Initiating and supporting public health research in UK. In: Holland WW, Detels R, Knox G, eds. *Oxford textbook of public health*. Vol 3. Oxford: Oxford University Press, 1985.
- 3 Department of Health and the Welsh office. *General practice in the NHS—a new contract*. London: HMSO, 1989.
- 4 Morrell DC. Role of research in development of organisation and structure of general practice. *BMJ* 1991;302:1313-6.
- 5 Opat LJ, Holland WW. *Health Services Research*. London: Department of Community Medicine, UMDS, 1983.
- 6 Berwick DM, Enthoven A, Bunker JP. Quality management in the NHS—the doctor's role—I. *BMJ* 1992;304:235-9.
- 7 Berwick DM, Enthoven A, Bunker JP. Quality management in the NHS—the doctor's role—II. *BMJ* 1992;304:304-8.
- 8 Irvine D. *Managing for quality in general practice*. London: King's Fund, 1990.
- 9 Hutchinson A, Fowler P. Outcome measures for primary health care: what are the research priorities? *Br J Gen Pract* 1992;42:227-31.
- 10 Lomas J. Editorial: Quality assurance and effectiveness in health care: an overview. *Quality Assurance in Health Care* 1990;2:5-12.
- 11 Smith R. Where is the wisdom? *BMJ* 1991;303:798-9.
- 12 Light DW. Effectiveness and efficiency under competition: the Cochrane test. *BMJ* 1991;303:1253-4.
- 13 Cochrane A. Effectiveness and efficiency: random reflections on health services. London: Nuffield Provincial Hospitals Trust, 1972.
- 14 McWilliam LJ, Knox F, Wilkinson N, Oogarah P. Performance of skin biopsies by general practitioners. *BMJ* 1991;303:1177-9.
- 15 Williams RB, Burdge AH, Lewis Jones S. Skin biopsy in general practice. *BMJ* 1991;303:1179-80.
- 16 Hillan KJ, Johnson CP, Morton R. Effect of GP contract on referral of specimens for histological examination. *BMJ* 1991;303:1180.
- 17 Not R&D but D&A [editorial]. *Health Services Management* 1991 Dec.
- 18 Morrell D. *Epidemiology in general practice*. Oxford: Oxford University Press, 1988.
- 19 Jones RJ. Research in general practice. *The Practitioner* 1986;230:627-8.
- 20 Neuberger J. *Ethics and health care: the role of research ethics committee in the UK*. London: King's Fund, 1992.
- 21 Department of Health. *Local research ethics committee*. London: DoH, 1991.
- 22 Edwards PJ, Hall DMB. Screening, ethics and the law. *BMJ* 1992;305:267-8.