

Systematic review of recent innovations in service provision to improve access to primary care

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SUMMARY

Background: In England, there are particularly pressing problems concerning access to adequate primary care services. Consequently, innovative ways of delivering primary care have been introduced to facilitate and broaden access.

Aims: The aim of this study was to review the evidence of seven recent innovations in service provision to improve access or equity in access to primary care, by performing a systematic review of the literature.

Design of study: Systematic review.

Setting: Primary care in the United Kingdom (UK).

Method: Seven electronic databases were searched and key journals were hand-searched. Unpublished and 'grey' literature were sought via the Internet and through professional contacts. Intervention studies addressing one of seven recent innovations and conducted in the UK during the last 20 years were included. Two researchers independently assessed the quality of papers.

Results: Thirty studies (32 papers and two reports) were identified overall. Variation in study design and outcome measures made comparisons difficult. However, there was some evidence to suggest that access is improved by changing the ways in which primary care is delivered. First-wave personal medical services pilots facilitated improvements in access to primary care in previously under-served areas and/or populations. Walk-in centres and NHS Direct have provided additional access to primary care for white middle-class patients; there is some evidence suggesting that these innovations have increased access inequalities. There is some evidence that telephone consultations with GPs or nurses can safely substitute face-to-face consultations, although it is not clear that this reduces the number of face-to-face consultations over time. Nurse practitioners and community pharmacists can manage common conditions without the patient consulting a general practitioner.

Conclusion: The evidence is insufficient to make clear recommendations regarding ways to improve access to primary care. In the future, it is important that, as new initiatives are planned, well-designed evaluations are commissioned simultaneously.

Keywords: delivery of health care; health services accessibility; primary health care.

Introduction

IN England, there are particularly pressing problems concerning the existence and availability of adequate primary care services, and the degree to which these services are used or are usable by patients in a population that is diverse both socioeconomically and culturally. In *The NHS plan*, access to primary care was outlined as a key priority.¹⁻³

Access is difficult to define and there is no consensus as to what constitutes 'appropriate' access and what indicates a high degree of access. In general terms, good access exists when patients can get 'the right service at the right time in the right place'.⁴ By this definition, utilisation demonstrates people's command over appropriate healthcare resources, which allows them to preserve or improve their health.⁵ This measure of access exceeds the mere presence of a facility⁶ and hence implies that access is a multi-dimensional concept. For the purposes of this study, we define access in terms of four key aspects: availability, utilisation, relevance and effectiveness, and equity (Box 1).

There are many factors (for example, temporal, geographic, financial, socioeconomic, educational, linguistic, cultural and technological) known to have an influence on whether and how patients access services.⁷ In a culturally and socioeconomically diverse city such as London, the interplay of these factors can be very complex, and access must be evaluated in the context of differing perspectives, health needs, and the material and cultural settings of diverse groups.⁸ We know already that the greater health problems of deprived communities are compounded by lack of available local primary care, and by patterns of help-seeking behaviour, which mean that patients in need of care may not access it appropriately or at all.^{9,10}

In general, there are a number of methods that may be used to try to improve access to primary care. Firstly, one can enlarge capacity overall (for example, increase entry to medical and nursing schools and provide financial or other incentives to qualified doctors to become general practitioners [GPs]). Such attempts should have a national impact, but may not improve access in specific areas such as London and its constituent communities. Secondly, one can try to maximise the output of existing resources by enhancing the skill mix of professional teams. Increasing the output of limited resources may increase access, although the results may be a perceived reduction in access for patients (for example, they can no longer see their usual GP about the routine management of a chronic condition). Thirdly, one can try to target resources at under-served areas and/or vulnerable or under-served population groups; that is, one can attempt to address inequalities in access. Unfortunately, there is little

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HOW THIS FITS IN*What do we know?*

Improving access to primary care is a key National Health Service priority. Innovative ways of delivering primary care have been introduced to facilitate and broaden access, however little is known about the ways in which these interventions improve access and which methods are most effective in reaching different groups.

What does this paper add?

Access may be improved by diversifying modes of provision, by enhancing the roles of staff, and by implementing services more flexibly. Access inequalities may be addressed by targeting limited resources to deprived areas or groups.



evidence concerning how inequalities arise or how they may be addressed.¹⁰ Fourthly, one can attempt to improve specific aspects of access such as waiting times and continuity of care.

Based on this, innovative ways of delivering primary care have been introduced to facilitate and broaden access. In many cases, these programmes have been implemented and expanded prior to the publication of any evidence of their effectiveness. The aim of this study was to assemble and assess the available evidence on the effectiveness of some of these innovations in improving access to primary care and in reducing access inequalities.

This study builds on a rapid review of the literature concerning patient access to primary care commissioned by the Greater London Authority in 2002 to inform policy makers and future research.

Method

Systematic search methods were used to locate randomised controlled trials (RCTs), systematic reviews, analytical intervention, and observational studies conducted in the United Kingdom (UK) over the last 20 years that addressed the following topics: personal medical services (PMS), GP- and nurse-led telephone consultations in general practice, nurse-led care, walk-in centres, NHS Direct, and pharmacist-led initiatives. Table 1 provides detailed information on each of the seven innovations with respect to their aims and the strategies that they employ in an attempt to improve access. Studies addressing other innovations in primary care were excluded owing to time and resource constraints.

PubMed/Medline, The Cochrane Library, The Cochrane Controlled Trials Register, The Database of Reviews of Effects, The Cochrane Database of Systematic Reviews, the Cochrane Methodology Register, HealthStar and the National Research Register were searched. Unpublished and 'grey' literature were sought via the following websites: the British Medical Association, NHS Confederation, NHS Modernisation Agency, King's Fund, National Institute of Clinical Excellence, the National Primary Care Research and Development Centre, the London School of Hygiene and Tropical Medicine, the School of Health and Related Research at Sheffield University, and all London primary

- *Availability* can be defined as the supply side of health services; that is, whether resources are supplied adequately and in proportion to need. This aspect is also seen to include direct and indirect costs to the patient.
- *Utilisation* is a measure of the use of services⁶ indicating the degree of fit between the user and the healthcare system⁵³ (that is, the demand side). Utilisation measures the extent to which the health service accommodates the patient and the community served, and includes dimensions of usability, acceptability, and affordability. It is important to recognise that utilisation, in addition to normative need, is affected by patients' expectations of the health service, perceptions of illness, felt need, and the health information available to them, which are in turn influenced by social, economic, and cultural variables.
- *Service relevance and effectiveness* measures whether the right service is provided to adequately address the health needs of the target population and whether it has been developed to take into account the local sociocultural setting.
- *Equity* is a social justice dimension of access indicating the extent to which resources are mobilised to reflect need in a given population. Needs-based equity is very difficult to measure as any assessment must account for variations in needs within unique geographical settings and also within different sociocultural and economic subgroups.⁸

Box 1. Access.

- UK *or* United Kingdom *or* GB *or* Great Britain *or* England *or* Wales *or* Scotland *or* Ireland *and*
 - 1980–2003 *and*
1. Access* *or* wait* *or* use* *or* using* *or* consult* *or* demand* *or* need* *or* avail* *or* accept*
 2. Primary care *or* minor illness* *or* self-limit* *or* minor condit* *or* advic* *or* advis*
 3. Nurs*
 4. GP* *or* general practitioner* *or* general practice* *or* doctor*
 5. Pharmac* *or* LPS
 6. PMS *or* personal medical servic* *or* salaried GP* *or* salaried contract*
 7. Telephone *or* TC *or* advice *or* advis*
 8. Walk in Centre* *or* Walk-in Centre* *or* Walk-in Service* *or* Walk in *or* WiC
 9. NHS-Direct *or* NHS Direct *or* telephon*

Box 2. Search terms and strategy.

care trust and strategic health authority websites. Also, all London academic departments of general practice and primary care were contacted, and the System for Information on Grey Literature in Europe was searched. Searches were conducted for authors of studies that fulfilled inclusion criteria, through the Web of Science. Reference lists of all articles retrieved were searched for additional articles. Also, CHAIN (the Contact, Help, Advice and Information Network) was searched and key informants were contacted. Enquiries were put on health services research and minority ethnic health mailing lists for relevant articles, reports, and contacts.

Table 1. Overview of services.

Service	Aims of initiative	Strategies	Target population
Personal medical services	<ul style="list-style-type: none"> To make primary care more locally responsive To address problems of GP recruitment and retention To enable closer working relationships within the PCT To introduce greater flexibility in general practice To address inequalities in the provision of health care 	<ul style="list-style-type: none"> Allowing participating GPs the option of being salaried Allowing nurses and former community trusts to take a lead on providing primary care for the first time Allowing GPs the option of providing extended services Providing primary care services in areas where care has been previously unavailable Targeting services to the needs of local vulnerable and marginalised groups 	Previously under-served groups
Telephone consultations with GPs or nurses	<ul style="list-style-type: none"> To reduce unnecessary face-to-face consultations 	<ul style="list-style-type: none"> GPs and nurses utilise telephone consultations to triage patients, and provide telephone advice and authorise repeat prescriptions where appropriate 	Patients requesting same-day appointments
Nurse practitioner-led care	<ul style="list-style-type: none"> To increase access to primary care in under-served areas To reduce GP workload for minor conditions 	<ul style="list-style-type: none"> Nurses roles are developed through increased training opportunities so that they may work independently, diagnosing, prescribing, treating and referring patients onwards where appropriate 	Patients consulting for minor conditions in busy general practice sites
Walk-in centres	<ul style="list-style-type: none"> To provide more easily accessible primary care that is centred around the needs of the local population 	<ul style="list-style-type: none"> Nurse-led primary care centres established in convenient areas with extended opening hours and walk-in access, providing health care/advice for minor conditions and health promotion Nurses are supported by computerised clinical decision software and frequently a GP is available on-site 	Local communities
NHS Direct	<ul style="list-style-type: none"> To provide more easily accessible primary care To reduce unnecessary demand on other primary care services 	<ul style="list-style-type: none"> A 24-hour nurse-led telephone service offering healthcare advice and acting as a triage point for referrals to other services NHS Direct effectively utilises skill mix employing nurses, trained call handlers and GPs Nurses are supported by computerised clinical decision-making software NHS Direct is available online 	All of England and Wales
Pharmacist-led initiatives	<ul style="list-style-type: none"> To provide more easily accessible primary care for minor conditions To reduce unnecessary demand on other primary care services 	<ul style="list-style-type: none"> The role of the community pharmacist is enhanced to include medicine management; pharmacists are able to dispense certain medications without a prescription from a GP (pharmacists are guided by a prescription formulary) NHS Direct is able to refer directly in some instances to community pharmacists Training programmes and skills checks have been established for pharmacists 	Patients with self-limiting/minor conditions

All abstracts were retrieved and analysed for relevance to study aims. Full articles were retrieved for studies that included, as part of their study, an assessment of an access variable (availability, utilisation, relevance and/or effectiveness, or equity) to one of the seven interventions under inquiry. See Box 2 for the search strategy.

Two reviewers independently assessed the quality of all papers retrieved. A data extraction sheet, developed by the research team, was used to extract methodology (sample size, losses to follow-up, tools for data collection, degree of randomisation and blinding), outcome measures and indicators. Outcomes concerning access and equity of access were tabulated. The quality of individual studies was systematically assessed using an internationally recognised hierarchy of strength of evidence.¹¹ Only studies falling into levels I, II and III (RCTs, systematic reviews,

controlled trials without randomisation, cohort and case-control studies, and studies exhibiting a large difference in outcome over time or space) were included in the study. Descriptive studies were not included.

Since study designs and dimensions varied greatly, we assessed the relevant methodological aspects individually rather than using a ranking or composite score. Our assessment criteria allowed us to judge and classify the reliable contribution of each study and its relevance for access.

Results

Thirty studies (32 papers and two reports) were identified for inclusion overall. Table 2 shows a breakdown of the number of studies found by topic. The evidence of each innovation in improving access is summarised below. Study characteristics, including an assessment of method-

Table 2. Search results.

Innovation	Number of studies included
Personal medical services	8
GP-led telephone consultations	5
Nurse-led telephone consultations/ triage in general practice	4 (5 papers)
Nurse-led care in general practice	4
Walk-in centres	6 (7 papers)
NHS Direct	1 (2 papers)
Pharmacist-led care in the community	2 (3 papers)
Total	30 (34 papers)

ological rigour classed as either I, II or III, are summarised in Supplementary table 1.

Personal medical services

PMS were designed to facilitate the provision of primary care services that targeted locally defined needs, and allowed for different arrangements of GP employment. PMS, as a policy, has the potential to impact on access in the following ways:

- by allowing primary healthcare teams to target services for specific population groups (for example, older people and mental health service users);
- by allowing the development of new or enhanced services in under-served deprived areas;
- by enhancing partnership working between primary care, social services, and the voluntary sector;
- by improving the recruitment and retention of GPs; and
- by skill mixing, to increase the capacity of teams to deliver health care; for example, substituting a nurse for a GP in chronic-disease management.

Some of this potential has been realised. PMS pilots made small but significant improvements in the quality of mental health care and the care of older people (where these were the focus of the pilot)^{12,13} and there is some evidence that PMS sites are located in deprived areas.¹⁴

Partnership working between agencies has been slow to develop.^{13,15-18} However, there is some evidence that GP recruitment and retention has been improved, albeit modestly, with the option of salaried contracts.¹⁹ Salaried posts in PMS contracts have attracted the attention of the potential GP workforce, including inactive GPs and locums.¹⁹

PMS have allowed for nurse-led primary care¹⁸ to combat poor service access in areas having difficulties recruiting and retaining GPs. However, no studies looking at nurse-led PMS met the study inclusion criteria and so the impact of this initiative on access cannot be determined.

All published data related to first wave pilots. There is no evidence about the contribution of later PMS to primary care access.

GP-led telephone consultation in general practice

Five studies were found. The initiation of telephone consultations in general practice can positively influence both

availability and use of primary care, although the use of the telephone may increase access inequalities for those who do not have access to a telephone, have language difficulties or communication impairments. Evidence suggests that both patients and providers view the telephone as an appropriate mode of communication about health care.^{20,21} There is some indication that callers are using GP 'phone-in' services as an alternative to setting up an appointment or requesting a home visit.²² A system whereby all patients requesting same-day appointments are told that a GP will telephone them later may lead to a decrease in demand for GP face-to-face consultations,²⁰ however one study showed subsequent increases in repeat consultations in the following weeks.²³ This study was based on a small sample of individuals, however, and the response rates were low.²³ Unsurprisingly, GP accessibility by telephone is dependent on the patient-to-telephone line ratio, and patient satisfaction with phone-in services is directly related to the ease in which they reach the GP on their first try.²⁴

Nurse-led triage and telephone consultations in general practice

Four studies (five papers) were found. One study provided evidence that nurses can manage a high proportion of out-of-hours primary care calls safely and effectively,^{25,26} without an increase in daytime surgery attendances within the following 3 days. No differences were found between GP and nurse triage relating to the number of patient deaths within 7 days, the number of emergency hospital admissions, or the number of accident and emergency attendances.²⁵ Furthermore, nurse-led telephone triage may lead to reductions in GP workload.²⁶⁻²⁸ Richards *et al* found that the number of GP consultations, and particularly the number of home visits, were reduced by the implementation of a system of nurse telephone triage.²⁷ However, the same study provided evidence of increased numbers of routine appointments and heightened out-of-hours and accident and emergency attendances.²⁷ Pinnock *et al* assessed the impact of nurse-led telephone consultations for routine asthma medication review and found telephone consultations used in this way to be significantly time saving and without any differential in adverse outcomes compared with face-to-face care.²⁹

Nurse practitioner-led care in general practice

Four studies were found. There is some evidence that nurse-led care for minor conditions is as safe and effective as care by doctors; that is, resulting in similar clinical outcomes.³⁰⁻³² No data was found comparing the detection of rare and serious adverse health outcomes between both professional groups.³³ There is evidence that nurses give longer consultations³⁰⁻³³ and carry out more tests,^{32,33} however, no difference has been found in referral rates to secondary care between doctors and nurse practitioners.^{30,33} Findings on re-consultation rates are inconsistent. Venning *et al* report higher return rates for patients who have seen a nurse practitioner (0.49 versus 0.36)³² whereas Kinnersley *et al* did not find any evidence of a difference.³⁰ Similarly, there is variable evidence regarding the proportion of cases that nurses can handle independently

(73–96%).^{31,32} There is consistent evidence that nurse-led care achieves high patient satisfaction rates.^{30,32}

Walk-in centres

Six studies were found. There is reasonable evidence to suggest that walk-in centres do enhance access to health care for a minority of the population and that they provide an acceptable, well used service. Walk-in centres provide convenient and quick access to good quality primary care,³⁴ eliciting high patient satisfaction rates and resulting in onward referral rates of 19–26%.^{35–38} (Referral rates to secondary care from walk-in centres [and NHS Direct] are higher than those from general practice.³⁵) However, walk-in centres do not address access inequalities, attracting largely white middle-class patients with minor and self-limiting complaints.^{35–38} Walk-in centres do appear to improve access for young and middle-aged men,³⁶ who generally access primary care less than other population groups. People chose to attend walk-in centres because of their convenience,^{37,38} because they feel that their GPs are too busy, and owing to the anonymity that the walk-in centre offers.³⁸ The evidence of any reduced workload in neighbouring services is inconclusive.^{37,40} Users generally view the walk-in centre as an alternative route to care — most users would have consulted a GP or accident and emergency services had the walk-in centre not existed.³⁶ However, there is an indication that one-third of all users intended to make a GP appointment following their walk-in centre appointment.³⁶ Walk-in centres may be duplicating existing service provision, creating new demand and not addressing access inequalities.

NHS Direct

One study (one report and one paper), based entirely on routine data, was found providing some evidence to suggest that NHS Direct provides an easily accessible professional service that is well used and of high quality, achieving high caller satisfaction rates, and is no less safe than other routes to care.⁴¹ There is some concern over delays in getting through and regarding the potentially inconsistent quality of the self-care advice provided.⁴¹ The impact of NHS Direct on other services is unknown, although some evidence suggests that it is halting increasing demand on out-of-hours cooperatives and deputising services.^{41–42}

Unfortunately, at this time NHS Direct callers appear to be the same people who already make use of pre-existing health services — the white, healthy middle class. NHS Direct is particularly underused by older people,⁴¹ possibly reflecting a lack of awareness of the service, perceived incompatibility of the service with health needs, or sensory difficulties. Additionally, the service is clearly less accessible to those who have linguistic or conversational impairments (although NHS Direct, with the help of Language Line, is making an effort to reduce such barriers).

Pharmacist-led interventions

Two studies (three papers) were found on pharmacist-led care. There is weak evidence that patients can be safely managed by pharmacists' advice and treatment, and prescribed over-the-counter medication with low rates of onward

referral to GPs (4%)⁴³ and normal reconsultation rates.^{43–45} Patients perceive pharmacists as appropriate care providers and easily accessible, yet there is some concern about the lack of privacy in pharmacies.⁴⁵ For those who are entitled to free prescriptions and cannot afford the cost of over-the-counter medication, a GP consultation is the only option.

Discussion

Summary of main findings

Very little robust evidence was found. Even among the studies meeting inclusion criteria, few of them were of 'gold standard' quality and many were carried out on a small scale.

There is some evidence that new contractual arrangements in primary care can enable service provision in formerly under-served areas and populations (for example, PMS). Also, organisational flexibility and targeting services around locally defined needs (for example, PMS) appears to be effective in improving access for marginalised groups.

Substituting nurses for GPs, or the telephone for face-to-face consultations may be effective in improving access where GP recruitment and retention is problematic. However, maximising the use of skill mix does not necessarily improve access inconsequentially, involving as it does trade-offs between different sorts of access. For example, some patients would clearly prefer to wait longer to see their GP than see a nurse. Furthermore, it is important to note that any form of telephone consultation infringes on equality of access, particularly for people who do not speak English as a first language, people with hearing or speech impairments, and people without access to a telephone.

Recent nurse-led initiatives such as NHS Direct and walk-in centres are undoubtedly improving access in general, in the sense that they are new services that are being widely used. However, as both are used primarily by population groups already accessing primary care through other routes, their value in addressing access inequalities may be questioned, particularly if these services employ staff who might otherwise work in conventional primary care settings in under-served areas. There are also clear inequalities of access for people whose English is limited and for those with a sight, hearing, or learning disability.

Furthermore, the majority of users consulting walk-in centres and NHS Direct, present with self-limiting conditions. Therefore, this increased accessibility to the health service could also increase the total demand on the NHS with little health gain for those consulting.

Pharmacist-led care creates an alternative point of first-contact access for patients and allows for flexibility in access. However, for those who are entitled to free prescriptions and who cannot afford the cost of over-the-counter medication, a GP consultation is the only option. In this way initiatives with community pharmacists will not necessarily increase access equitably.

Limitations of evidence

Time constraints have imposed limitations on what this review has been able to cover. Firstly, only studies conducted within the UK were included. Although evidence from elsewhere could be illuminating, it would need to be interpreted within

the UK context.⁴⁶ Secondly, social science databases were not searched and hence informative studies may have been missed. Thirdly, there are substantial gaps in the literature for both studies investigating long-term clinical outcomes and the cost-effectiveness of the innovations discussed. Finally, methodological thoroughness of reporting, study focus, and outcome measures varied greatly and were often reported in insufficient detail. Indicators were rarely clearly defined (for example, patient satisfaction) raising issues of the appropriateness of comparing such variables. Comparing different service settings, providers, and users of often undefined characteristics must be considered problematic, hiding confounding factors and necessitating the making of assumptions. Moreover, many of the studies included in this review utilised routine data. Routine data is often incomplete, inaccurate and/or inconsistent, which limits the validity of the findings.

Dimensions of access

There is no universally agreed upon definition of access. Please refer to Box 1 for an explanation of the model used for the purposes of this review. While considering access, it is important to take into consideration the inherent potential contradictions between different components of access. Little is known about the relative importance of different components of access to different population groups. All of the innovations discussed above involve trade-offs between these different aspects of access. For instance, telephone consultations prioritise rapid access over the choice to see a healthcare professional in person.

Access versus access inequalities

Recent innovations to improve access to primary care scarcely address access inequalities. PMS, as a policy, is arguably the only innovation in which healthcare provision is explicitly based on locally defined needs. In fact, many recent innovations, such as walk-in centres and NHS Direct may be increasing access inequalities by expending resources to ease access for affluent patient groups who are already accessing care.

Addressing access inequalities necessitates a bottom-up approach, where services are developed based on a local needs assessment. Clearly, targeting inequalities requires flexible service provision and decentralised planning, with providers supported by guidelines or 'tool kits' arising from evidence of best practice. Furthermore, a more collaborative and cooperative effort between primary care, social services and the voluntary sector would be a useful lever in facilitating access especially for deprived groups.

Access: the trade-offs with costs

Policy makers would be well advised to handle the concept of access with care. There is a need to compromise between optimal and acceptable service provision targets, between patients' expectations and what is economically and politically feasible.⁴⁷ Although improving access has obvious political and moral appeal it may conflict to some degree with other policy imperatives such as cost containment. In any healthcare system resource constraints

mean that the demand for health care has to be 'managed'; that is, kept within limits, particularly in the current climate of increasing patient expectations,⁴⁸ where patients increasingly want to be actively involved in the decisions over their health care. It is necessary for healthcare professionals to try to balance their views of care needs and priorities with public perception. NHS Direct and walk-in centres are examples of how improving access may be expensive without resulting in measurable reductions in the use of other primary care services.

Implications for research

The quality of the literature on access to primary care is mediocre. Future studies should make use of reliable and validated quantitative and qualitative research tools and should consider the benefits of triangulation.

The RCT has been firmly established as the 'gold standard' in study design, however it has achieved supremacy predominantly in the assessment of therapeutic agents. It is important to note that an RCT is not always feasible⁴⁹ nor necessarily appropriate. Recent work suggests that well-designed observational studies with either a case-control or cohort design may produce similar results to randomised controlled trials.⁵⁰⁻⁵² Moreover, there are difficult theoretical and operational challenges in using the RCT model for complex interventions whose performance depends on the social setting, such as is likely to be typical of attempts to improve access and, in particular, to reduce inequalities of access.

There are large conceptual gaps in the literature. No studies were found that based their evaluations on a theoretical model of access. Therefore, it is unclear how stated outcome measures relate to different components of access. The majority of studies have inferred a link between service availability and use with service accessibility and usability. Clearly, the case of access is not so straightforward.

Few studies were identified that looked at service relevance with respect to community health needs and priorities, and likewise service acceptability in relation to the cultural, social, and economic needs of the population served. Moreover, health-seeking behaviour and the link to access was rarely noted. An awareness of the context and complexity of health-seeking behaviour may help in redressing access inequalities.

Research is needed on the determinants of demand, on how patients choose between alternative services, and how specific services fit into the pathways of care that patients follow. Future studies may help determine whether and to what extent services are overlapping, whether they are equally cost-effective and successful in responding to the same need, whether they are accessed by the same population group, and which characteristics make them attractive to different population groups.

Longer-term studies are also needed, however, the lack of these in the current literature on access highlights more of a policy imperative than a research one.

Conclusion

Very little robust evidence was found on these innovations. In the light of these gaps, it is important to point out that the

absence of strong evidence (or indeed, any evidence) does not mean that a particular initiative or intervention is ineffective or without value, only that we lack the evidence to be sure either way. The absence of negative evidence is as important as the absence of positive evidence. For many of these interventions there are neither conclusive reasons why an intervention should be attempted, nor conclusive reasons why it should not. In such a situation, it may well be legitimate to implement the intervention.

Overall, access to primary care may be improved by diversifying modes of provision, by enhancing the roles of staff and by implementing services more flexibly. In reducing access inequalities, the key may be to prioritise the allocation of limited resources in well-targeted services, serving previously assessed gaps in care and/or communities. In the future it is important that as new initiatives are conceived and implemented, well-designed studies and evaluations are commissioned.

References

- Department of Health. *The NHS plan. A plan for investment. A plan for reform*. London: The Stationery Office, 2000.
- Department of Health. *Saving lives: our healthier nation*. London: The Stationery Office, 1999.
- Department of Health. *Independent inquiry into inequalities in health report* [Acheson Report]. London: The Stationery Office, 1998.
- Rogers A, Flowers J, Pencheon D. Improving access needs a whole systems approach [Editorial]. *BMJ* 1999; **319**: 866-867.
- Gulliford M, Figueroa-Munoz J, Morgan M, et al. What does 'access to health care' mean? *J Health Serv Res Policy* 2002; **7**: 186-188.
- Donabedian A. Models for organizing the delivery of personal health services and criteria for evaluating them. *Milbank Mem Fund Q* 1972; **50**: 103.
- Rosen R, Florin D, Dixon J. *Access to health care — taking forward the findings of the scoping exercise. Report of a rapid appraisal of stakeholder views and review of existing literature*. London: National Co-ordinating Centre for NHS Service Delivery and Organisation, 2001.
- Gulliford M, Hughes D, Figueroa-Munoz J et al. *Access to health care: Report of a scoping exercise for the National Co-ordinating Centre for NHS Service Delivery and Organisation R&D*. London: Department of Public Health Sciences, King's College London, 2001. <http://www.sdo.lshtm.ac.uk/access.htm> (accessed 13 Apr 2004).
- Dixon, J. *What is the hard evidence on the performance of 'mainstream' health services serving deprived compared to non-deprived areas in England? Report for the Social Exclusion Unit*. London: King's Fund, 2000.
- Department of Health. *NHS R&D strategic review — primary care. Report of topic working group*. London: The Stationery Office, 1999.
- Lewis R, Mays N. Trends in government health policy — from GMS to PMS. In: Lewis R (ed). *Transforming primary care: personal medical services in the new NHS*. London: King's Fund, 1999: 4-17.
- Steiner A, Campbell S, Robison J, et al. Does PMS improve quality of care? In: PMS National Evaluation Team (eds). *National evaluation of first wave NHS personal medical services pilots. Summaries of findings from four research projects*. London: Department of Health, 2002: 11-14.
- Jenkins C, Lewis R, Gillam S. *North Hillingdon PMS pilot*. London: King's Fund, 2001.
- Carter Y, Curtis S, Harding G, et al. Addressing inequalities. In: PMS National Evaluation Team (eds). *National evaluation of first wave NHS personal medical services pilots. Summaries of findings from four research projects*. London: Department of Health, 2002.
- Jenkins C, Lewis R, Gillam S. *Isleworth Centre Practice PMS pilot*. London: King's Fund, 2001.
- Jenkins C, Lewis R, Gillam S. *Edith Cavell Practice PMS pilot*. London: King's Fund, 2001.
- Jenkins C, Lewis R, Gillam S. *South West London Primary Care Organisation PMS pilot*. London: King's Fund, 2001.
- Walsh N, Andre C, Barnes M, et al. First wave PMS pilots. Opening Pandora's box — accountability, integration and responsiveness. In: PMS National Evaluation Team (eds). *National evaluation of first wave NHS personal medical services pilots. Summaries of findings from four research projects*. London: Department of Health, 2002: 6-10.
- Sibbald B, Petchey R, Gosden T, et al. Salaried GPs in PMS pilots: Impact on GP recruitment, retention, workload, quality of care and costs. In: PMS National Evaluation Team (eds). *National evaluation of first wave NHS personal medical services pilots. Summaries of findings from four research projects*. London: Department of Health, 2002: 15-18.
- Jiwa M, Mathers N, Campbell M. The effect of GP telephone triage on numbers seeking same-day appointments. *Br J Gen Pract* 2002; **52**: 390-391.
- Car J, Sheikh A. Telephone consultations. *BMJ* 2003; **326**: 966-969.
- Brown A, Armstrong D. Telephone consultations in general practice: an additional or alternative service? *Br J Gen Pract* 1995; **45**: 673-675.
- McKinstry B, Walker J, Campbell C, et al. Telephone consultations to manage requests for same-day appointments: a randomised controlled trial in two practices. *Br J Gen Pract* 2002; **52**: 306-310.
- Hallam L. Access to general practice and general practitioners by telephone: the patient's view. *Br J Gen Pract* 1993; **43**: 331-335.
- Lattimer V, George S, Thompson F, et al. Safety and effectiveness of nurse telephone consultation in out of hours primary care: randomised controlled trial. *BMJ* 1998; **317**: 1054-1059.
- Thompson F, George S, Lattimer V, et al. Overnight calls in primary care: randomised control of management using nurse telephone consultation. *BMJ* 1999; **319**: 1408.
- Richards DA, Meakins J, Tawfik J, et al. Nurse telephone triage for same day appointments in general practice: multiple interrupted time series trial of effect on workload and costs. *BMJ* 2002; **325**: 1214.
- Gallagher M, Huddart T, Henderson B. Telephone triage of acute illness by a practice nurse in general practice: outcomes of care. *Br J Gen Pract* 1998; **48**: 1141-1145.
- Pinnock H, Bawden R, Proctor S, et al. Accessibility, acceptability and effectiveness in primary care of routine telephone review of asthma: pragmatic RCT. *BMJ* 2003; **326**: 477-481.
- Kinnersley P, Anderson E, Parry K. General practice: Randomised controlled trial of nurse practitioner versus general practitioner care for patients requesting 'same day' consultations in primary care. *BMJ* 2000; **320**: 1043-1048.
- Shum C, Humphreys A, Wheeler D, et al. Nurse management of patients with minor illnesses in general practice: multi-centre, randomised controlled trial. *BMJ* 2000; **320**: 1038-1043.
- Venning P, Durie A, Roland M, et al. Randomised controlled trial comparing cost-effectiveness of general practitioners and nurse practitioners in primary care. *BMJ* 2000; **320**: 1048-1053.
- Horrocks S, Anderson E, Salisbury C. Primary care: Systematic review of whether nurse practitioners working in primary care can provide equivalent care to doctors. *BMJ* 2002; **324**: 819-823.
- Salisbury C, Chalder M, Manku-Scott T, et al. *The national evaluation of NHS walk-in centres*. Bristol: University of Bristol, 2002.
- Grant C, Nicholas R, Moore L, Salisbury C. An observational study comparing quality of care in walk-in centres with general practice and NHS Direct using standardised patients. *BMJ* 2002; **324**: 1556.
- Salisbury C, Manku-Scott T, Moore L, et al. Questionnaire survey of users of NHS walk-in centres: observational study. *Br J Gen Pract* 2002; **52**: 554-560.
- Salisbury C, Munro J. Walk-in centres in primary care: a review of the international literature. *Br J Gen Pract* 2003; **53**: 53-59.
- Munro J, Nicholl J, Webber L, Paisley S. *Walk-in centres: A review of existing research*. Sheffield: University of Sheffield, 2001.
- Chalder M, Sharp D, Moore L, Salisbury C. Impact of NHS walk-in centres on the workload of other local healthcare providers: time series analysis. *BMJ* 2003; **326**: 532.
- Hsu R, Lambert P, Dixon-Woods M, Kurinczuk JJ. Effect of NHS walk-in centres on local primary healthcare services: before and after observational study. *BMJ* 2003; **326**: 530.
- Munro J, Nicholl J, O' Cathain A, et al. *Evaluation of NHS Direct first wave sites: Final report of the phase 1 research*. Sheffield: Medical Care Research Unit, University of Sheffield, 2001.
- Munro J, Nicholl J, O' Cathain A, Knowles E. Impact of NHS Direct on demand for immediate care: observational study. *BMJ* 2000; **321**: 150-153.
- Munro J, O' Cathain A, Knowles E, Nicholl J. *Evaluation of the NHS Direct Essex pharmacy pilot scheme*. Sheffield: Medical Care Research Unit, University of Sheffield, 2001.

44. Hassell K, Whittington Z, Cantrill J, *et al*. Managing demand: transfer of management of self limiting conditions from general practice to community pharmacies. *BMJ* 2001; **323**: 146-147.
45. Whittington Z, Cantrill J, Hassell K, *et al*. Community pharmacy management of minor conditions — the 'Care at the Chemist' scheme. *The Pharmaceutical Journal* 2001; **266**: 425-428.
46. Starfield B, Shi L. Policy relevant determinants of health: an international perspective. *Health Policy* 2002; **60**: 201-218.
47. Bower, Roland M, Campbell J, Mead N. Setting standards based on patients' views of access and continuity: secondary analysis of data from the GPAS. *BMJ* 2002; **326**: 258-267.
48. Wanless D. *Securing our future health: Taking a long-term view*. London: HM Treasury, 2002.
49. Black N. Why we need observational studies to evaluate the effectiveness of health care. *BMJ* 1996; **312**: 1215-1218.
50. Benson K, Hartz AJ. A comparison of observational studies and randomised, controlled trials. *N Engl J Med* 2000; **342**: 1878-1886.
51. Concato J, Shah N, Horwitz R. Randomised controlled trials, observational studies, and the hierarchy of research designs. *N Engl J Med* 2000; **342**: 1887-1892.
52. Wolff N. Randomised controlled trials of socially complex interventions: promise or peril? *J Health Serv Res Policy* 2001; **6**: 123-126.
53. Penchansky R, Thomas JW. The concept of access: definition and relationship to consumer satisfaction. *Med Care* 1981; **19(2)**: 127-140.

Supplementary information

Additional information accompanies this paper at:
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