Non-attendance in general practice: a systematic review and its implications for access to primary health care

Ajay George and Greg Rubin


**Background.** Non-attendance in general practice has received increasing attention over the past few years. Its relationship with access to health care has been recognized and is of particular relevance in light of the access targets set out in the NHS Plan.

**Methods.** The literature was searched for articles relating to non-attendance. Titles and abstracts were examined, and relevant articles obtained. Bibliographies were examined for further references. Articles that described interventions for reducing non-attendance that were comparative studies and that examined general appointments, as opposed to appointments for screening purposes for example, were of particular interest.

**Results and Conclusions.** The epidemiology of non-attendance has been well described, but there is little work on the reasons for non-attendance. Evidence for effective interventions to improve attendance in primary care is lacking, and this may prove to be an area of research interest in the future. As well as specific interventions to reduce non-attendance, new approaches to health care access are required in order to tackle this issue.

**Keywords.** Appointments and schedules, health services accessibility, primary health care, systematic review.

**Introduction**

Non-attendance represents a significant cost in terms of time lost as well as a substantial financial cost. A survey carried out jointly by the Doctor Patient partnership and the Institute of Healthcare Management in the UK revealed that 17 million GP appointments and 5.5 million practice nurse appointments were missed in 2000, at an estimated cost of £150 million ($240 million). Two recent studies estimated the non-attendance rate in the UK to be 6.5 and 7.7%. With increasing pressure from patients and health services on primary care to see more patients and to see them more quickly, these figures represent inefficiencies that could be improved upon. In other health care systems, such as in the USA, non-attendance represents loss of income, which may in turn have effects on the delivery of patient care in the future.

This has implications for the wider debate regarding access to health care services. In the USA, Murray describes how access to health care and in particular delays to access can lead to dissatisfaction for both patients and staff and may mean worsening clinical outcomes. In the UK, access is one of the key themes of The NHS Plan, which was published in 2000. The plan, whilst acknowledging that patient expectation and demand for services is increasing, has set specific targets for access in primary care. The latest interim targets set by the Department of Health state that by March 2003, 90% of patients will be able to see a primary care professional within 24 h and a GP within 48 h. Understanding the nature of non-attendance and exploring ways to reduce it will help towards achieving these targets by improving the efficiency of the service provided. This is particularly relevant in view of the current shortages of doctors, nurses and other health care professionals.

This paper aims to discuss the nature of non-attendance in general practice and reviews the evidence for strategies to reduce it. Its focus is primary care as opposed to both primary and secondary care because of the differences between the two settings. Patients initiate the vast majority of appointments in primary care, whereas appointments in secondary care generally are initiated by doctors and other health care professionals.
on behalf of the patient. The motivations for attending these appointments will differ and hence will affect attendance. Length of wait for hospital appointments is longer than in primary care and will also affect attendance. Length of journey and reliance on a car or public transport differs between primary and secondary care, and this will also influence patients’ behaviour.

Methods

MedLine (1966–2001), Embase (1980–2001), the Cochrane Library, NHS National Research Register (NRR) and the NHS R&D register were searched in August 2001. The search strategy used is described in Appendix 1. Searches were restricted to the English language. Relevant articles were retrieved and their bibliographies scrutinized for further references. Articles describing the epidemiology of non-attendance or interventions for reducing non-attendance in primary care were included. Those studies that focused on general appointments, as opposed to appointments for screening purposes for example, were of particular interest. Articles describing non-attendance in secondary care, specific chronic disease clinics or health promotion programmes (e.g. screening) were excluded.

Results

The search identified 599 articles (473 from Medline, 106 from Embase and 20 from the NRR). The abstracts and titles of these articles were screened for relevance. Thirty-one fulfilled the inclusion criteria and full copies were obtained. Of these, nine papers described interventions to reduce non-attendance, of which two were from the UK primary care setting.

Epidemiology of missed appointments

Studies describing defaulters in primary care have largely been single-practice studies of short duration (typically 1–3 months). Most have been set in the USA where health care is funded largely through private health insurance. Patients are able to self-refer to specialist clinics and can choose whether to attend a GP. In the USA, non-attenders represent loss of revenue and there is greater incentive to understand the nature of the problem. Non-attendance rates in US primary care range from 5 to 55%, whilst studies from Saudi Arabia and Israel report rates of 29.5 and 36%, respectively. Single-practice studies in the UK have reported non-attendance rates between 2.9 and 11.7%. A retrospective study of nine general practices in Sheffield reported an overall non-attendance rate of 6.5% over a 2-year period. A similar 12-month retrospective study of four practices in Leeds showed a non-attendance rate of 7.7%. Non-attendance rates in general practice are higher for return visits and for appointments made with those other than the patient’s usual doctor (practice nurse, GP registrar, medical student or first year resident). Failure to attend is less likely on Mondays than on Fridays and more likely if the appointment is booked one or more weeks in advance, though it is unclear whether this relationship is linear. Previous attendance rate predicts default in some studies but not in others. For example, only 25% of the frequent non-attenders (defined as >5 times per year) identified in the first year of the Sheffield study were frequent non-attenders in the second year.

Patients who miss appointments tend to be young (aged 17–40 years), come from a lower socio-economic class and live in deprived areas. Patients with chronic disease are better attenders, but whether this is a function of their illness or some other factor, such as age, is unclear. Patients that perceive their illness to require urgent care are better attenders. Race is a predictor of non-attendance in some studies but not others, but studies differ in their categorisation of ethnicity. Confounding variables such as language may affect the interpretation of these findings. US studies have found that type or presence of health insurance affects attendance. Those relying on state funding, who were self-paying or had less comprehensive cover were more likely to miss appointments.

Reasons for non-attendance

There are obvious methodological difficulties in identifying the reasons for non-attendance in primary care. By definition, patients have not co-operated with an appointment system and so may feel less than comfortable participating in research which asks them the reasons why. Indeed, such research may appear confrontational if not handled sensitively. Neal and colleagues mailed a self-completion questionnaire on reasons for non-attendance to 411 patients who had missed an appointment in the preceding 24 h and an equal number of controls. They were only able to obtain a 21% response rate in the study population compared with a 39% response rate in the control group. Cosgrove followed-up 40 patients who failed to attend by visiting them at home within 24 h of missing their appointment. Of these 40, 12 could not be contacted, one refused an interview and the remaining 27 co-operated once they realized that the reason for the visit was to help and not to reprimand. The most common reasons for default were not being well enough to attend the surgery (eight), resolution of symptoms (six) and forgotten/muddled appointments (seven). Most of the eight patients who were too ill to attend did not feel that they warranted a home visit but the visiting doctor felt that four of them did.

A more recent study by Hamilton used a next-day postal questionnaire to 100 consecutive non-attenders from each of five local practices, obtaining a 34.8% response rate.
response from 500 patients. Sixty patients (34%) said that they had forgotten about the appointment, 20 (12%) said that it was a practice error, 20 (12%) said that there was a mix up over the date/time of the appointment and 16 (9%) gave other reasons such as traffic, oversleeping and hospital admission. Hamilton also tried to identify why they did not cancel the appointment. From 158 of the patients, 50 (32%) had forgotten or not considered it, 18 (11%) had tried but the telephone lines were busy, and 34 (27%) gave other reasons. Forgetfulness on behalf of the patient and communication errors (e.g. patients being told the wrong time for the appointment, appointments not being cancelled by reception staff) are issues that have also been identified in other studies.16,23,29

**Appointment systems**

The concept of non-attendance stems from the creation of appointment systems. Between 1951 and 1981, the proportion of practices in the UK using an appointment system increased from 2 to 88%.30 Their advantages and disadvantages are summarized in Table 1. Appointment systems can be a barrier to health care, and non-attendance may be a reflection of difficulty of access to services. Where there are problems in accessing health care, waiting lists for appointments get longer and this in turn leads to increased non-attendance.6 Appointment systems may be difficult to use for members of communities in areas of social deprivation or low socio-economic class.4,31 Some patients have less predictable, chaotic lifestyles that are not easily compatible with a structured system. For an indirect measure of this, Virgi studied patients who attended surgery without an appointment for a period of 10 days. Each patient was given a questionnaire to complete before their consultation asking them about their attitudes to making appointments, reasons for attending plus socio-demographic and psychological data. The GPs were asked to fill in a questionnaire afterwards about the diagnosis and perception of urgency. Of the 172 patients in the open access group, 86% completed the questionnaire compared with 96% of the 145 in the appointment group. There was a higher proportion of single women with children (whether accompanied by children or not), more marital separations and more social problems in the open access group compared with the appointment group. Those in the open access group also were less likely to have used a car to attend for the appointment and more likely to perceive their problem to be urgent. The doctors were less likely to identify psychological problems in the open access group. When asked to comment on the statement “Making appointments is a hassle”, 61% of the open access group and 47% of the appointment group agreed with it.

<table>
<thead>
<tr>
<th>Practice</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control workload</td>
<td>Creates ‘extras’, increasing GP stress</td>
<td>Patients unhappy if unable to get appointment</td>
</tr>
<tr>
<td>Makes the day more predictable</td>
<td></td>
<td>Potential for confrontation between receptionist and patients leading to staff dissatisfaction</td>
</tr>
<tr>
<td>Reduces GP stress</td>
<td></td>
<td>Requires efficient telephone system</td>
</tr>
<tr>
<td>Able to plan workload around personal timetable</td>
<td></td>
<td>Increased costs</td>
</tr>
<tr>
<td>Plan for situations requiring extra time or other professionals, e.g. minor surgery</td>
<td></td>
<td>Failure to attend</td>
</tr>
<tr>
<td>Reduce consultation rate for minor illness</td>
<td></td>
<td>Unable to be seen when they want</td>
</tr>
<tr>
<td>Patient</td>
<td></td>
<td>Unable to see the doctor that they want</td>
</tr>
<tr>
<td>Able to plan appointments around personal timetable</td>
<td></td>
<td>Difficulties getting to the practice on time (public transport, child care)</td>
</tr>
<tr>
<td>Better for chronic disease management</td>
<td></td>
<td>Negotiating with receptionist</td>
</tr>
<tr>
<td>Less waiting in the surgery</td>
<td></td>
<td>Language barriers</td>
</tr>
</tbody>
</table>

**The response of the practice**

If a patient makes an appointment and then fails to turn up, what response, if any, is required? Time and limited resources are used up in taking further action over patients who do not attend. By pursuing non-attenders, do we behave paternalistically or in a way that breaches that person’s autonomy? The problem is that we do not know enough about the reasons why people make appointments and then fail to keep them. Some may simply forget to attend while others may have genuine illness, either physical or psychological.27

We can view non-attendance as part of the wider debate of access to health care. Missed appointments reflect problems with the existing system of health care, whether from the patient’s or provider’s perspective. In order to improve attendance, two approaches can be explored. The first is simply to look at the issue of non-attendance in isolation and to find ways of improving attendance rates. The second is more wide ranging, acknowledging the issue of health care access and patient demand and finding new ways of working through a more patient-centred approach.

**Improving attendance**

Macharia et al., in a systematic review of interventions to improve attendance, identified 23 studies in hospital
and family practice in the USA, Canada and the UK. Patients attending for medical, psychosocial and screening purposes were included. Interventions were grouped into three main categories; reminders (letter and telephone), reducing perceived barriers (e.g. orientation statements) and increasing motivation (e.g. patient information, contracts). Using pooled data, the authors calculated odds ratios for the effectiveness of these strategies (Table 2). Prompts, either by letter or by telephone, were effective in the medical and psychosocial groups, though the review was unable to examine the effect of prompts on screening appointments. Orientation statements provide information about the reasons for the appointment, what patients may expect when they arrive and how the clinic is organized. These are likely to be of value in secondary care clinics but are not relevant to primary care in the UK. Contracting is a process where a formal agreement is made with patients to attend future appointments and to agree to treatment plans, and may have a role in certain situations (e.g. chronic disease management) when compliance is poor.

Many initiatives to reduce non-attendance in primary care have yet to be evaluated, particularly in the UK. For example, posters displaying the number of missed appointments are used to influence patient behaviour,42 but it is unclear whether they are effective. The current literature in UK primary care is limited (Table 3). Wilkinson43 showed that reminding patients of the need to cancel appointments works in reducing non-attendance rates. Although a small study, its findings have been supported by others.44 However, reminding people to cancel appointments will only be effective if patients have access to telephones and practices are able to deal with these calls. Some studies have shown that patients who fail to attend appointments are less likely to own telephones,10,15 even though in 1997 94% of UK households owned a telephone.45 A dedicated cancellation line in the practice may provide the answer but has cost implications. Patients would also need to be encouraged to cancel their appointments early enough so that they can be allocated to someone else.46

One general dental practice study found that reminders were an effective means of reducing non-attendance and suggested that they were cost effective within the fee structure for dental practice.44 Whether this is true in general medical practice has yet to be determined. It may be that such schemes are only cost effective if a practice has a high baseline non-attendance rate.41 The use of reminders, particularly telephone reminders, does, however, raise the issue of confidentiality and runs the risk of messages being given to persons other than the patient. The use of telephone or even text message reminders47 also requires practices to have accurate records of telephone numbers and have telephone systems capable of dealing with the extra calls.

**New approaches**

An alternative approach to the issue of non-attendance is to consider it within the whole system of general practice service provision. The Boston-based Institute of Health Improvement has led the way in initiatives to redesign clinical office practice radically, for example through their Idealised Design of Clinical Office Practices (IDCOP) project.48 Non-attendance is addressed through the reconfiguring of appointment booking arrangements to an ‘open access’ system (term advanced access in the UK). However, access is only one of a series of dimensions to be tackled, others being office flow, reliability, and staff and patient satisfaction.

There have been calls for a similar approach to be adopted in the UK49 where the National Primary Care Development Team has singled out advanced access for action. Through the Primary Care Collaborative,50 a change management initiative established by the Department of Health, some striking examples of improved appointment availability have been produced, one of which also described a fall in non-attendance rates from 120 per month to 20 per month in an 11 500 patient practice.51 Demand is also handled differently, through the use of other health care professionals, triage, telephone and E-mail consultations, group management of clinical problems and patient self-help.50 Regional centres are being established in the UK to provide advice on the implementation of advanced access and demand management, supported by £48 million of NHS funding in 2002/2003. All practices are expected to be working with their regional centre by September 2003.52 However, some current participants in the advanced access initiative have complained of a lack of robust evaluation and increased workload, and have questioned its sustainability in the long term.53

**Conclusion**

Consultation is the defining step in the transition from self-care to medical care and is determined by interplay between the inconvenience of the problem, the utility of lay networks37 and access to health care. Non-attendance can be viewed as the manifestation of a critical level of

---

**TABLE 2**

Effectiveness of interventions in improving attendance (adapted from Table 2 in reference 41)

<table>
<thead>
<tr>
<th>Intervention (target population)</th>
<th>No. of subjects (pooled)</th>
<th>Odds ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Letter prompt (medical)</td>
<td>1737</td>
<td>2.17 (1.69–2.92)</td>
</tr>
<tr>
<td>Telephone prompt (psychosocial)</td>
<td>708</td>
<td>2.88 (1.93–4.31)</td>
</tr>
<tr>
<td>Orientation statement (medical and psychosocial)</td>
<td>417</td>
<td>2.91 (1.51–5.61)</td>
</tr>
<tr>
<td>Contracting (medical and psychosocial)</td>
<td>173</td>
<td>1.89 (1.04–3.45)</td>
</tr>
<tr>
<td>Physician prompt (screening)</td>
<td>2250</td>
<td>1.64 (1.36–1.98)</td>
</tr>
</tbody>
</table>
### Table 3  
**Interventions for improving attendance in UK primary care**

<table>
<thead>
<tr>
<th>Study</th>
<th>Setting</th>
<th>Patients</th>
<th>Intervention</th>
<th>Control</th>
<th>Results (intervention)</th>
<th>Results (control)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wilkinson, 1994[43]</td>
<td>Single general medical practice (12,000 patients). Baseline default rate of 4.9%</td>
<td>37 frequent non-attenders (defined as having missed ≥3 appointments/year)</td>
<td>Letter sent to patient asking them to cancel appointments if unable to attend (n = 18)</td>
<td>No letter (n = 19)</td>
<td>(6 months follow-up), Reduction in mean number of appointments missed from 2.9 to 0.5 (95% CI 0.2–0.8)</td>
<td>(6 months follow-up), Reduction in mean number of appointments missed from 2.8 to 1.2 (95% CI 0.7–1.8)</td>
</tr>
<tr>
<td>Reekie, 1998[44]</td>
<td>Single-handed general dental practice. Baseline default rate of 9.4%</td>
<td>2500 appointments (500 in each group)</td>
<td>Postal reminder 3 days before Manual telephone reminder during working hours, the day before Automated telephone reminder during the evening of the day before Combination of postal and telephone reminders</td>
<td>No reminder</td>
<td>Default rate of 3.8%</td>
<td>Default rate of 9.4%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Default rate of 4.4%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Default rate of 5.6%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Default rate of 3.0%</td>
<td></td>
</tr>
</tbody>
</table>
unsuitability in the agreed arrangements for an access episode, either from the outset or as a result of change in circumstances.

Access is a complex concept. It is concerned with the relationship between need, provision and utilization of health services. It can be defined in terms of acceptability, affordability (direct and indirect costs to the patient), availability (the supply and demand relationship), physical accessibility (geographical and physical barriers) and accommodation (the way services are related to clients’ needs, including waiting times, opening times, booking facilities). Optimal access has been defined as providing the right service at the right time in the right place. However, the purpose for which access is sought ranges from the very simple, i.e. an acute, non-serious illness or administrative need, to being part of an extended series of encounters for the management of a serious chronic disease. The patient or the clinician may have initiated the consultation and they may have differing perceptions of its importance or the likely value of its outcome.

We know little of the consequences of changing the balance of these interactions in terms of subsequent patient behaviour, use of self-care or health care resource utilization. Careful evaluation of changes in access will be needed across all these dimensions. Neither can we be sure that non-attendance is necessarily a bad thing. How usefully is the time released by non-attendance utilized—to see extras, to consult with colleagues or to catch up on paperwork? If non-attendance is reduced, do clinicians become more cautious about allowing consultations to over-run, even when the need is great? Interventions to reduce non-attendance need robust evaluation within a broad-based context that includes patient, organizational, quality and health economic perspectives.

References

1 Griffiths J. Missed appointments rise by 60%. GP 2001; August 24: 7.
25 Barron W. Failed appointments. Who misses them, why they are missed and what can be done. Primary Care 1980; 4: 563–574.
36 Bloch TP. Patients’ preferences for appointment or non-appointment surgeries. Br J Gen Pract 1991; 41: 518.
Appendix 1. Medline search strategy

Papers describing non-attendance in primary care

(1) “non-attendance”.mp or Appointments and schedules/ or "attend*”.mp
(2) “default”.mp
(3) Patient dropouts/
(4) “failure to attend”.mp
(5) 1 OR 2 OR 3 OR 4

(6) Family practice/ or “general practice”.mp
(7) Primary health care/ or “primary care”.mp
(8) 6 OR 7
(9) 5 AND 8
(10) limit 9 to english language